Votive Columns in Greek Sanctuaries of the Archaic Period

Herdt, Georg

Award date:
2013

Awarding institution:
University of Bath

Votive Columns in Greek Sanctuaries of the Archaic Period

Georg M. Herdt

A thesis submitted for the degree of Doctor of Philosophy

University of Bath

Department of Architecture and Civil Engineering

2013

Contents page

Acknowledgements:

Wie alle Arbeiten dieses Umfanges ist auch dieses Werk nicht allein meiner eigenen Tätigkeit geschuldet. Daher möchte ich all meinen Freunden und Verwandten herzlichen Dank aussprechen; ohne euch wäre diese Arbeit nicht entstanden.

Im besonderen danke ich meinem Doktorvater Mark Wilson Jones, durch seine kontinuierliche Kritik ist die Arbeit gereift und schliesslich fertig geworden. Besonderer Dank gilt auch Paul Richens, Paul Shepherd und David Scahill; ohne euren Einfluss wäre diese Arbeit mit Sicherheit nicht in der Form entstanden, die vorliegt. John Tredinnick, für seine Hilfe bei Rekonstruktionen in 3-D, Eleni Balomenou und Kathrin Weber für ihre unnachahmliche Weise, diese Arbeit über lange Distanz zu unterstützen und Niko Zaft für seine Hilfe bei Übersetzungen aus dem Alt-Griechischen. Für ihre Hilfe beim korrekten Formulieren der englischen Sprache danke ich im besonderen Michael Dayle, Jake Chapman und James Hobbs.

Neben meiner Familie danke ich Katharine Thomas und Alexander von Kienlin, da ihr, jeder auf seine Weise, für mich da wart und damit einen entscheidenden Anteil an der Fertigstellung der Arbeit hattet.

Ohne eure Unterstützung wäre mir Vieles schwerer gefallen.

List of Illustrations:

author; Delphi Votive - Gruben, G. (1996): Abb. 18.; Naxos Temple – Gruben, G. (1994): Abb. 18 and Gruben, G. (1997): Abb. 2b; Samos Temple – Hendrich, C. (2007): Abb. 19; Samos Votive – Kienast, H. (1985): Abb. 15 reconstruction by author; Ephesos Temple - Gruben, G. (1994): Abb. 17; Ugento Votive – Degrassi, N. (1981): Fig. 10 alteration of the height by author; Athens Votive – Korres, M. (1997): Fig. 2, reconstruction by author; Samos Temple - Gruben, G. (1994): Abb. 17; Olympia Votive – Herrmann, K. (1984): Abb. 3; Kalaureia Votive – Pakkanen, J. (2010): Fig. 7; Priene Temple - Gruben, G. (1994): Abb. 17.

Discussion:

Fig. 5.1: Goat on a free-standing wooden column at the sacred precinct of Khokana, Nepal. Web.

Fig. 5.2: Reconstruction of the inside of the temple of Apollo, Bassae. Cockerell R. (1884).

Fig. 5.3: The oldest marble volute capital, free-standing monument of Alextides, Naxos. Herdt, Wilson Jones (2008): fig. 1 and fig. 3.

Fig. 5.4: Explosion drawing of the components of Trajan's column, Rome. Wilson Jones, Mark (2000): fig. 8.8.

Final illustration: Victory Monument of the Napoleonic Wars, Berlin. Web.

Appendix I:

Fig. 6.1: Baldachin shown in relief at the gate of Balawat, 9th century BC. Wesenberg Burkhardt (1971): abb. 146.

Fig. 6.2: Base for a free-standing column of stone with led, Olympia. Hermann, Klaus (1984): abb. 5 and Tafel 21-4.

Fig. 6.3: Structural concept of a free-standing column with a base. Author.

Fig. 6.4: "column base (?) with iron ring" of a free-standing column from Smyrna. Cook, Nicholls (1998): fig. 22.

Fig. 6.5: Reconstruction of the wooden column at Smyrna with an Aeolic capital. Author.

Fig. 6.6: Base for a monumental free-standing column from Samos. Buschor E. Schleif, H. (1933): abb. 9 and Author.

Fig. 6.7: Reconstruction of the wooden monumental column at Samos. Author.

Abstract:

Ancient Greek architecture and the question of influences leading to its formation, along with its relation to the sacred institution of the temple, have been much discussed for centuries. This dissertation contributes to the discussion regarding architectural, and therefore spatial, ornamental and structural aspects of the early development of Greek sacred space. Votive offerings, as an integral part of religious sanctuaries and as a potential influence on the buildings they contained, merit attention, more attention than has been given to them in the past. The focus of this study is the votive column, a member of the group of votives that has certain similarities with its counterparts in buildings. For several reasons that will be elaborated further on, the free-standing column has been placed by scholars into later periods of the development of sanctuaries; furthermore, the existence of votive columns crafted in wood has been denied in recent studies. It can be shown that in ancient times, specifically during the transition of the Dark Ages to the Archaic era, wood would have been the material of choice, even though the preferred material of the later Greco-Roman constructions was marble. In fact, more gravitas is attributed to this traditional member of a sanctuary than previously assumed. So as to understand this better, built structures and votive monuments are compared here by means of 3D reconstructions, an exercise which confirms the visual presence of the latter. Indeed a spatial grasp of early Archaic sanctuaries throws into relief the prestige of votive columns, which often dwarfed the temples adjacent to them. This is potentially significant for thinking about the origin of the orders, calling into question the consensus which favours the building as the primary focus for development.

***

Chapter-structure:

The traditional presentation of archaeological sites in print obscures the meaning of free-standing votive offerings. The most common surviving part of a building (dating back to the 7th century BC) is the foundation. Only occasionally parts of the upright architecture can be found. Votive offerings present an even more difficult problem since many of these dedications were movable and/ or made of a perishable material. Remains of columnar offerings, if crafted from a durable material, can still be found. These objects relied on either a firm base or stand that was movable, or one fixed by a foundation buried in the ground. In case of the first, a comparison of such free-standing column bases to existing temple foundations published in plan does not give sufficient information of the two monuments heights and therefore of their relative visual importance. In order to assess the significance of free-standing columnar monuments built remains of free-standing columns of the 7th and 6th century BC have to be interrogated as well as other media of descent.

Introduction:

The role of free-standing monuments, especially the element of a column in history is often mentioned; the opinions of influential scholars about the genesis of this element of architecture are briefly recalled in this chapter. This includes theories from the 19th century (AD) to the present and concerns the materials used for their construction as well as the origin of their styles. Indeed, the importance of free-standing columns as part of sanctuaries of the 7th and 6th century BC varies significantly, from complete absence to an essential requirement of a sanctuary.

Chapter I:

It has to be noted that the element of a free-standing dedication is not a Greek invention, nor is this a column. Almost every important civilisation prior to the Greek culture neighbouring the Mediterranean made use of columnar elements for their

sacred sites. As a potential source of influence columnar elements are briefly illustrated for a selection of cultures that were either lost during the time Greek art arose or for cultures that continued to exist. Knowledge about this free-standing element may have come to Greece via various paths, either directly through trade or indirect via ancient relicts, tales or Myths.

Chapter II:

The earliest indication of the existence of free-standing columns in Greek culture can be obtained from the nascent Greek literature of the Geometric period. Texts of this time articulated the canon of the Gods and occasionally mention columns used for both contexts investigated, within the structural system of a building and free-standing. Moreover, the authors mention the material these columns are made of, giving an insight into the construction practice of antiquity. This includes Hesiod and Homer of the 8th century BC as well as Herodotus, a writer of the 5th century BC. Pausanias as an author of the Roman period of the 2nd century AD completes this group. Especially his lengthy descriptions of Greek sanctuaries give both general and specific insights on the subject.

Chapter III:

Written descriptions are not the only surviving testimony of sanctuaries and the columns dedicated within them, representations on Greek vases display their presence. Several scenes with free-standing columns as part of the iconography are painted on *Lekythoi* and *Panathenaic amphorae*; the *Black-figure* painting style is of particular interest - a style introduced in the late 7th century BC. With interpreting paintings comes a different pre-condition; representations of structures are not bound to the principles of realism. Thus they cannot be viewed as accurate in terms of scale and proportion, but used to indicate the popularity of such elements and their styles.

Chapter IV:

This chapter addresses archaeological discoveries attesting to built components within sanctuaries of the 7th and 6th century BC. It is the great age of these sites that

makes interpretation difficult; finds of the early Archaic period are rare and only give a rather incomplete picture. Published studies and excavation reports show un-interpreted and miss-interpreted fragments of columnar components leading to the need for greater screening. Spatial reconstructions of columnar monuments and coeval buildings within the same precinct are compared to demonstrate the importance of free-standing columns for the Archaic period. As with any reconstruction, these remain tentative, especially since for this period the archaeological evidence is little and no canon or recognisable conviction of form had been developed.

Chapter V:

The concluding chapter of this thesis condenses observations previously made to generate a complete picture of the development of free-standing columns in the context of Greek architecture from the early Archaic period to the end of the 6th century BC. The key arguments will relate to the height of columns, their ornamentation and their position relative to other elements in the sanctuary. The fact that early building integrated as well as free-standing columns were conceivably, and even probably, made of wood suggest an alternative for the genesis of columnar ornament. At the time Greek architecture increased in scale it was the free-standing column that first became monumental. This leads to the conclusion that this element was not only of great importance but – crafted of wood – possibly even older than any building within a sanctuary. Due to their age and prominence the free-standing column was destined to articulate the architectural ornament the orders made famous in later centuries.

***

Fig. 0.1: Partly restored free-standing monument at Poseidonia, Paestum.

Introduction: The role of votive dedications in Sanctuaries

> "We are no longer able to see the Greek temple as part of a greater whole, the sanctuary, of which the temple was the centre of attention and to which its meaning was subordinate. Not content with that, we have robbed the temple of its essential accessories."
>
> Gottfried Semper 1851[1]

We are accustomed to think of columns as parts of buildings and to presume that this was ever so. When turning to contemplate the origins of western architecture on the one hand and of the column on the other, attention always focuses on buildings. After all, Vitruvius couches his account of the origins of the orders in terms of experiments in construction involving roofs and temples. The visitor to modern archaeological sites will encounter many a free-standing column, but most of them will have been left or re-erected as remnants of temples and other buildings. Just occasionally, as at Paestum, there can be seen a free-standing column that was put up as such (Fig. 0.1).[2] Inside the museums of Delphi and Cyrene columns have been partially reassembled that functioned to support not superstructures but sculptures, in both cases mysterious Sphinxes (Fig. 0.2).[3] As to the forms of such columns, Doric and Ionic, it is generally accepted that they followed conventions established for buildings and indeed this aligns with the bulk of specialist opinion too.

During the last centuries of research, free-standing columns have been attributed a secondary role to the temple. This might be true for the Classical period but does this role reflect the situation for the very first Greek sanctuaries?

---

[1] Semper, Gottfried (1851): *Die Vier Elemente der Baukunst*. "Wir sind schon nicht mehr im Stande, den griechischen Tempel als Theil eines groesseren Ganzen zu sehen, zu dem er den Mittelpunkt der Beziehungen bildete, wie er selbst wieder das Heiligtum umschloss, dem er der Bedeutung nach untergeordnet war. Damit nicht zufrieden muessen wir ihn noch seines nothwendigen Beiwerkes berauben.", 29.

[2] Doepner, Daphni (2002): Abb. 147.

[3] Herdt, G. Wilson Jones, M. (2010): Abb. 3b.

The secondary status of the free-standing column is also in part due to a key passage in *de architectura libri decem* by Vitruvius which states that the oldest of the three columnar designs was designed "by chance" and for the context of a building.[4] This singular passage has given rise to different interpretations of the origin of columnar ornament but in case to free-standing columnar monuments are presumed to be secondary. At the beginning of the 20th century (AD) the idea of a free-standing monumental column was against the general consensus to the point that Rudolf Heberdey refused Theodor Wiegand's proposal for a gigantic Doric monument in the sanctuary on top of the acropolis in Athens.[5] But Wiegand was not alone in questioning the accepted genesis of architectural styles. A lively discussion in the 19th century (AD) opposed the consensus of its time. As mentioned in the opening quote, scholars such as Gottfried Semper pointed out the limited view scholars had of the development of Greek sanctuaries and therefore on the elements within them. In 1822, Heinrich Hübsch warns already in his *Über Griechische Architectur* against following Vitruvian ideas blindly given it had become evident that archaeological evidence didn't necessarily support his statements.[6] Hübsch desired an approach based on remains and facts since: "Greek Monuments were not designed after his [Vitruvius'] constructions, but his [Vitruvius'] constructions can be designed after the Greek monuments". With this different approach came the question of how the 'original' wooden temple had been created and whether the building really was the main attraction of the sanctuary at a time prior to the creation of the great temples.[7]

[4] Vitruvius IV 1.3, Perseus digital library, English by Morris Hickey Morgan 1914: "Dorus, … built a fane, which chanced to be of this order, in the precinct of Juno at Argolis, a very ancient city, and subsequently others of the same order in the other cities of Achaea, although the rules of symmetry were not yet in existence."

[5] Herberdey, Rudolf (1919): With his position Heberdey opposes the documentation of Theodor Wiegand, who associated several column drums to a capital and to a free-standing context. The height of this singular monument would have led to more than 6.70 m, a height which was unreached by buildings of that period at Athens: "Ein Weihgeschenkträger von solcher höhe wäre in dem reichen Materiale der Acropolis beispiellos.", 137. Wiegand, Theodor, (1904): 18.

[6] Hübsch, Heinrich (1822): Hübsch is arguing against Mr. Hirt, a court counsellor, who is convinced that Vitruvian' descriptions of architecture are an authentic reflection of the past, 80.

[7] Hübsch, Heinrich (1822): The great temples are Samos, Ephesus and Didyma; especially the early *dipteroi* at Samos and Ephesus marked a significant change for architectural designs. The period discussed is the time before their construction; the first half of the 6th century BC, 66/70.

Fig. 0.2: free-standing Ionic monument of the sanctuary of Apollo, Delphi.

The use of wood for the first constructions as presumed by Vitruvius was also called into question. Despite the plausibility of the use of wood for Greek buildings of the early 1st millennium BC, Hübsch pointed out that aspects worked equaly well in stone. Karl Bötticher went further and proposes in his book: *Die*

Tektonik der Hellenen in 1852 that stone was the material of choice.[8] The ornamental aspect of the capital is the result of its structural obligations as "*pteron* bearer" a role which, according to him, is particularly visible in the Ionic style.[9] This discussion continues with Gottfried Gruben, who interprets the capital as a load distributing element deriving from timber construction. All their considerations lead to the use of timber as a material of construction for the beginning of Greek architecture.[10]

Theories considering the nature of columnar ornament

According to Gruben, who developed ideas of another 19th century architect scholar Joseph-Ignaz Hittorf, the development of architectural elements from timber to stone can particularly be observed at the genesis of the Ionic style. It is the capital of this style that gradually evolves from the structural necessity of a corbel piece (Sattelholz) to the decorated column termination of later periods (Fig. 0.3).[11] Despite most existing early capitals being associated with a free-standing context, Gruben associates the origin of the design of the Ionic capital as derivative of a building;[12] he states that the: "ornament derives from small wooden buildings of eastern Ionia, identifiable due to the distinctive shape of the corbel piece that can only fulfil its use in a structural context".[13]

---

[8] Bötticher, Karl (1852): By keeping the focus on architecture, and the knowledge of the monumental stone constructions of later times, Bötticher interprets the creation of the column shaft as something deriving from the nature of stone. The reason is understandable; it is easier for a column created from several pieces to reach monumental height than by using a single huge one, hard to cut from the quarry and to transport to site, 128. Nevertheless, the existence of monumentality has to be questioned for the beginning of Greek architecture.

[9] Bötticher, Karl (1852): Within Bötticher's chapter about the Doric style he is explicit about the structural origin of the Ionic style, 134. The purely structural origin of columns finds general acceptance and this interpretation is still accepted. Townsend (2004): 310.

[10] In fact, the use of timber is certain as it can also be seen in literature and paint, for detail see chapters II and III.

[11] For the interpretation of the genesis of the Ionic style from a timber construction Gruben uses the free-standing votive from Sangri (crafted in stone and dating to the end of the 7th century) serves as master model for the development. Gruben, Gottfried (1996b): 65. Gruben, Gottfried (1989): 161-172.

[12] Bakker, Karel Anthonie (1999): Bakker illustrates the spectrum of all the Ionic capital known. As can be obtained from his catalogue, most of the early capitals are within a free-standing context.

[13] Gruben, Gottfried (1965): 149.

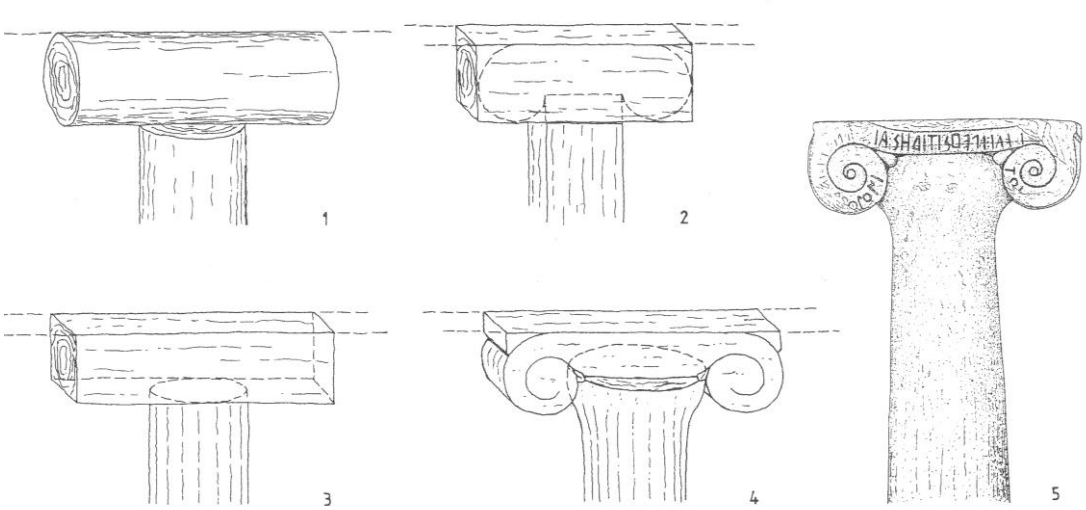


Fig. 0.3: Development of the capital according to Gottfried Gruben.

At least for Greek constructions from the Geometric period to the early Archaic period (900-500 BC) wood was a key material. Being a natural material, timber completely decomposes thus its early uses can only be detected by observing negative imprints in excavations and the petrified components of buildings from later periods. This has already been suggested by Vitruvius.[14] Since no traces of early free-standing columns made of timber can be found, is it possible that these never existed? If this theory can be accepted, then the architectural styles would have to originate from a building integrated pillar and out of a structural necessity, as proposed for the development of the corbel piece (Fig. 0.3).[15] This theory is also enhanced by the difference between the structural solution of a free-standing column which is not secured by the entablature and a column in a building integrated context. Placing a wooden shaft into a socket as a base or forcing it firmly into the ground represents non-durable solutions and since timber is prone to decay, Aenne Ohnesorg concludes that: "wooden votive columns are not possible for this period since these would not be able to stand without a firm fitting. From this it follows, during the 7th century the early shapes

[14] Vitruvius IV 2.5-6. Probably the most prominent building at which timber columns are presumed for the early phases is older temple of Hera at Olympia. Donderer, Michael (2005): 7. Gruben, Gottfried (2001): 53. For a discussion of the temples interpretation see: Arafat, K. W. (1995); Moustaka, Aliki (2002).

[15] Gruben, Gottfried (1996): Abb. 5, 65.

of the Ionic and Doric capitals must originate on buildings".[16] As already mentioned, this theory is mainly based on the absence of wooden components dating back to the first half of the first millennium. A situation not exclusive to free-standing columns as early buildings also suffer from the lack of existing components.

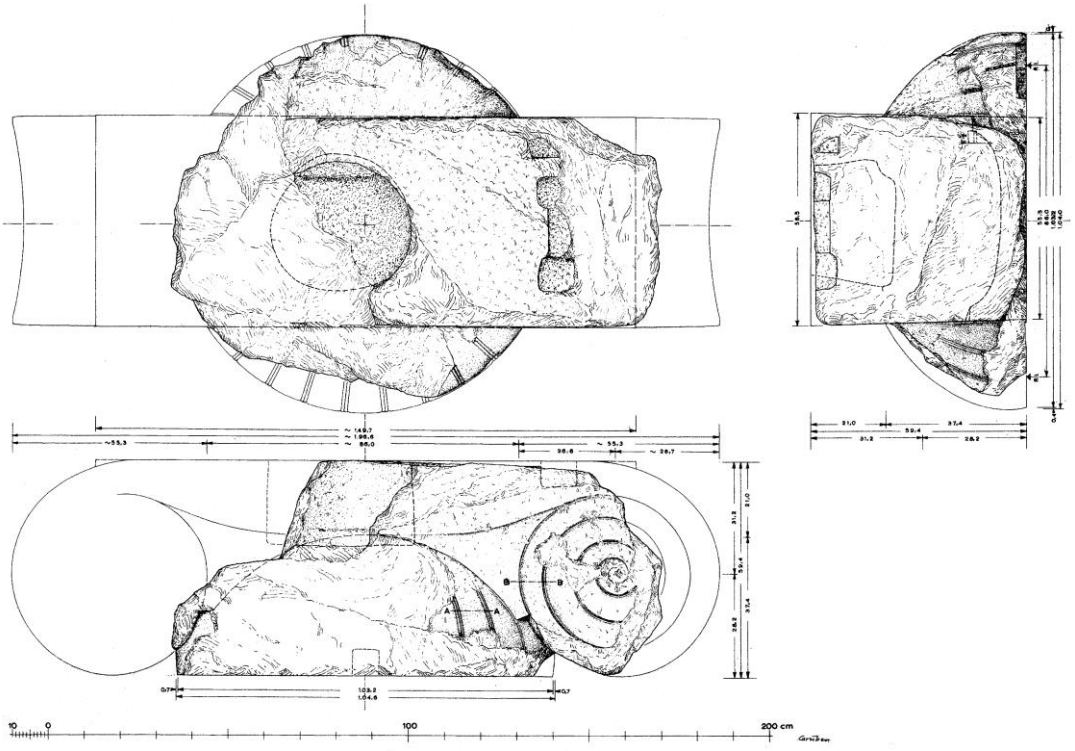


Fig. 0.4: Ionic capital from the Sphinx column of Aegina.

The disadvantage of wood being a non-durable material had already been recognised in antiquity. The epic *Iliad* by Homer, dated around the end of the 8th century BC, mentions an existing wooden free-standing column and informs the reader explicitly that this "has not been rotted by rain".[17] Moreover, in the *Descriptions of Greece* Pausanias offers a remedy for this problem*:* The unguent of the rose, "if smeared on wooden images (αγαλματα), prevents their decaying".[18] Timber seems to be a popular crafting material in antiquity and it

[16] Ohnesorg, Aenne (1996): "Hölzerne Votivsäulen kommen in dieser Zeit nicht in frage, weil sie ohne standfeste Einlassungen nicht stehen konnten. Daraus folgt, dass im 7. Jh. Die Frühformen des ionischen und dorischen Kapitells in der Architektur entstanden sein müssen.", 39.

[17] Homer, *Iliad* 23.326-333.

[18] Pausanias, *Descriptions of Greece* IX 41-7.

seems that builders, at least from the 8th century BC onwards, were familiar with the issue of decay.[19] Therefore, wood as a material for the earliest constructions cannot be questioned. The earliest surviving stone capitals betray tool marks related to carpenters' tools hinting to the previous material of construction (Fig. 0.4).[20] In the 19th century (AD) Semper, to whom German scholars like Gruben were much indebted, was also interested in the relation of form, construction and material. Semper interpreted the genesis of Ionic design in terms of ornamental and symbolic purposes as a "bit by bit transformation of the light palmette carrying blossom to the heavy timber loaded column head".[21] It is certain that the predecessor of this peculiar columnar ornament was made of wood, as was the shaft elevating it. Because of the naturally elongated shape of trees and due to the ease with which timber can be crafted it can be assumed that the tradition of using wood for shafts would have continued even after the introduction of stone.

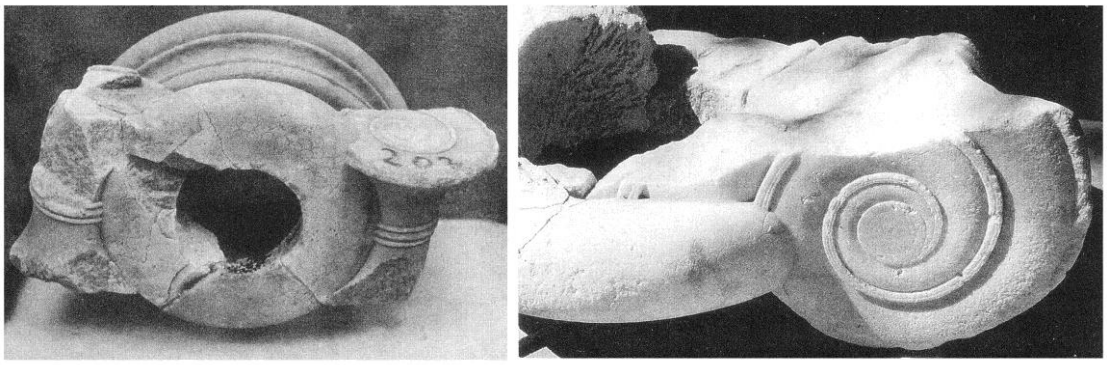


Fig. 0.5: Aeolic capital from Delos displaying a large and deep socket underneath the *echinus*.

In order for a stone capital to firmly connect to a wooden shaft, certain structural features are required; the capital must have a deep socket to receive the upper end of the shaft, into which the vertical element is engrafted. This solution can be confirmed archaeologically by a stone capital discovered at Delos (Fig.

[19] Pausanias, *Descriptions of Greece* II, 19-3. Pausanias proposes the use of timber as the material of ancient times for the fabrication of images.

[20] Gruben, Gottfried (1965): As for the capital of the Sphinx column of Aegina, the capital is dated according to stylistic characteristics to the beginning of the 6th century BC.

[21] Semper, Gottfried (1878): Quote from: Clarke, J. T. (1886): 11.

0.5).[22] For a construction from the middle of the 6th century BC, wood seems to be an old-fashioned material, although the deep socket displayed is ideal for a secure fit in between the two different materials.[23] Timber appears to be a viable alternative as material of construction for the shaft of this votive column dating to the 6th century BC. This applies for many small posts and pillars erected during the centuries, as well as for columnar dedications dating to the earliest examples of Greek sanctuary furniture.

It can be concluded that there are two technical alternatives for the genesis of the columnar styles (as the Ionic and Doric). These may either derive from a building-integrated (mainly structural) or a free-standing (mainly ornamental) context. This question cannot be solved by investigating the shape of the design, an investigation of the monuments purpose (if possible)_and especially the relation of the two alternatives to each other within early Greek sanctuaries (i.e. their visual significance) has to provide further information.

The setting of Sanctuaries of early Greek periods

As the opening quotation by Semper shows, the building was "subordinate" to the sanctuary. In fact, the early periods did not require a temple at all, the primary components were: a natural feature, a boundary, an altar, and - most importantly - offerings or according to Semper "essential accessories" (nothwendiges Beiwerk).[24] The natural feature was the element that located a sanctuary in the first place, with the boundary providing definition. The central feature for cultic practice was the altar; this was the place where organic offerings to the gods were burned and where the community met. Other donations, as inorganic offerings, were also given by individuals as dedications to the gods in

[22] Ohnesorg, Aenne (1994): Abb. 4 a/b, 44.

[23] The use of a timber shaft is enhanced by the decorative fish-scale pattern which is painted on the echinus. This pattern seems to be painted to the edge of the socket, the shaft therefore seems to slot into the capital – a construction indicating the use of timber since stone shafts are commonly connected by a smaller tenon.

[24] Whitley, James (2001): 134.

order to communicate with the deity and these were placed somewhere within the *temenos*, the space provided for the immortals.

The nature of such offerings was extremely varied; from tiny to monumental, from humble to extravagant, encompassing almost the entire spectrum of Greek and foreign production.[25] Occasionally the decoration of small dedications displays striking similarities to architectural ornament, an observation previously made by Bötticher slightly before Semper, as well as Semper himself. The similarity in style and structure, especially between columns and bronze candelabras, leads Bötticher to suggest a common origin for the shapes of both the offerings and the structures.[26] The nature of these votive dedications, was hugely diverse indeed and so too were the reasons for their donation. A series of examples of such reasons include: the request for a favour, monetary profit or even as gratitude for a safe journey.[27] As given by the donors, these offerings were meaningful and making them did not require the presence of a temple. Though later so important, temples were not crucial for the early development of the sanctuary, inviting a consideration of the reasons for the erection of such buildings.

Probably the main function of the building is to provide an appropriate shelter for a cult image or the house for the god as documented for the acropolis at Athens by Homers *Iliad*.[28] But this is not necessarily the case, as the *Odyssey* states that the deity may have lived with a man of honour also serving as its priest, as suggested by Hendrik Svenson-Evers.[29] Svenson-Evers is conscious of the political consequences of the local rulers' constant influence on the cultic statue, a

[25] Wilson Jones, Mark (forthcoming): Chapter I.

[26] Bötticher, Karl (1852): Bötticher sees the source for the development of the ornamentation in the common aim to create beauty, XXII. The similarities in the design are also related to the similarities in the (structural) requirements, 3/ 52.

[27] Osborne, Robin (1996).

[28] Homer, *Iliad* II, 549 The *Iliad* also documents a temple of Athena within the walls of Troy (*Iliad* VI, 92/ 297).

[29] Homer; *Odyssey* VII,81. Svenson-Evers, Hendrik (1997): 145. Scholl, Andreas (2006); Scholl also discusses the differences of the Greek term used, in any case the presence of a building at the early sanctuary of Athena at Athens has to be presumed, 15-17.

state of affairs that certainly cements their claim to power.[30] This imbalance of power perhaps would not create difficulties in an early society but seems rather unsustainable during the process of democratisation of a rising polis. Other than an imbalance of religious power, there is no reason for the divine icon to have its own shelter, making the construction of a temple an option but not a necessity.

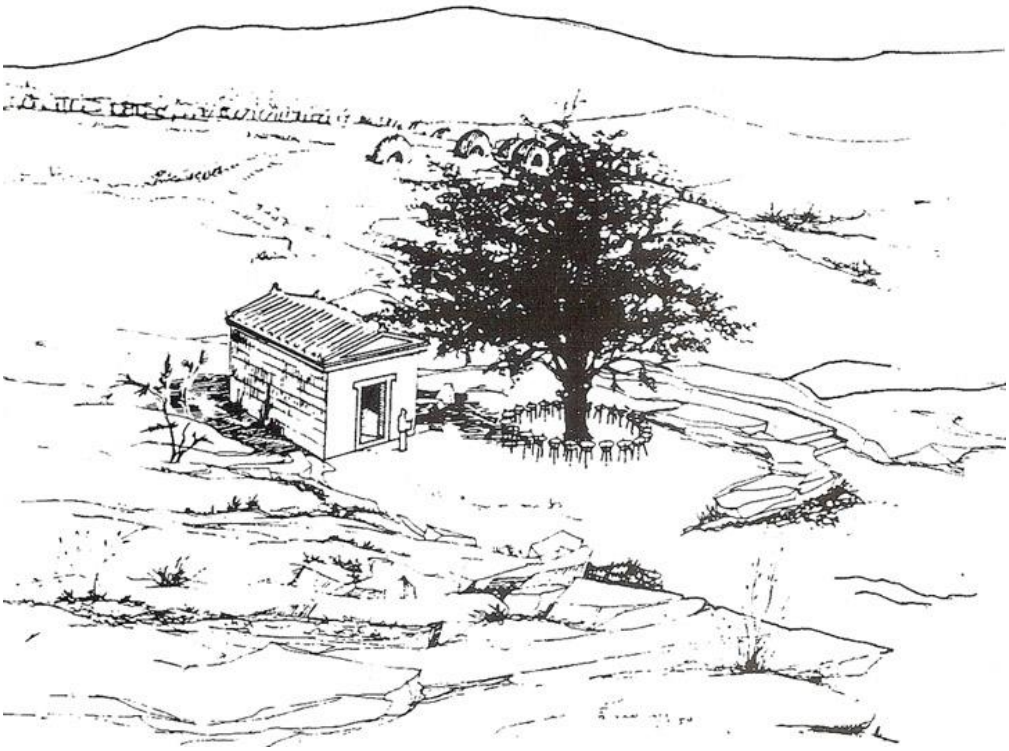


Fig. 0.6: Reconstruction of the sanctuary of Dodona, 4th century BC.

As a consequence, the construction of a temple is a relatively late feature of the sanctuary. Early periods of sanctuaries are likely to have been without a building, and even if one was constructed in the first instance, it would have been a rather modest feature.[31] Most sanctuaries were famous for their natural features

[30] Svenson-Evers, Hendrik (1997): As Svenson-Evers suggests the access to the divine icon was a political aspect that should not be underestimated. He concludes that this power was taken away from the ruling class during a political change which then required the construction of a building at the sanctuary, 150.

[31] Drerup, Heinrich (1969): Drerup enlists documented foundations of buildings of the Geometric period. In the case of the sanctuary of Orthia at Sparta it is explicitly mentioned that the temple is constructed above the pavement of the first cultic area, 19. This indicates that the sanctuary in first instance (around 700 BC) was without a temple: therefore a "tempellose Kultplatz". In

instead. This was the case of Dodona, its importance derived from an oak tree, sacred to Zeus, which served as oracle (Fig. 0.6).[32] The priests interpreted the whisper of the wind passing through its branches in combination with a metallic sound coming from the ring of bronze bowls surrounding the tree.[33] No earlier than the 4th century BC, a small building was erected measuring only 4.2 by 6.5 meters, more akin to a storage cabinet than a temple in size. The main feature of this site was always the tree surrounded by dedications, putting more emphasis on offerings than on buildings.

The first buildings within sanctuaries were indeed relatively small (Fig. 0.7).[34] Most buildings of the Geometric period (900-700) would reach little more than 3 m in width.[35] One of the smallest buildings known was erected around 700 BC on the island of Delos and measured roughly 3.40 x 2.80 m. With the technology available to the Greeks at this time, it was not possible to extend the size of a building significantly. The only way to increase the width was by separating the span by a row of columns in the middle. This would affect a building's height, which was dictated by the building's width.[36] Since neither height nor width could be increased to enhance the prominence of a temple, extending the length was the only option available. This can be seen at the first Heraion on the island of Samos, which was colossal for its time. A central row of columns split the nave into two aisles increasing the building's width to roughly 6 m, a respectable size for the 8th century BC. It was the length of the Heraion that pushed the boundaries of monumentality, the building reached 30 m or one

addition see: Osborne, Robin (1996): 90. Morris, Ian (1999): 275. Coldstream, J. Nicholas (1977): 317.

[32] The sanctuary was famous during Homeric times but its importance reaches to the time of the heroic Greeks. The bow of the Argo, Jason's most renowned ship, used a piece of the oak tree which gave life to the vessel. Homer, *Iliad* 16.233 and *Odyssey* 19.296, Apollonius of Rhodes, *Argonautica.*

[33] Gruben, Gottfried (2001): 116-118. Dieterle, M. (2007): 85.

[34] Wilson Jones, Mark (forthcoming): chapter 2.

[35] Especially the limited availability of metal reduced the possibilities of a large roof span. For a detailed analysis of Geometric buildings see: Drerup, H. (1969). Mazarakis-Ainian, A. (1987).

[36] A key element for a building spatial appearance is the design of the roof. Thatched roofs reach naturally higher than tiled or flat constructions. For earlier periods tiled roof are rather unusual, for the discussion of the use of roof types see Chapter IV. Drerup, Heinrich (1969): 70.

hundred feet, that is to say a *Hekatompedon*.[37] Such a building remained rare for that period and made for a very special sanctuary. Compared to this, the predecessor of the gigantic *dipteral* temple of Artemis at Ephesus was relatively small. The temple of the same time measured only around 6.5 x 11 m.[38]

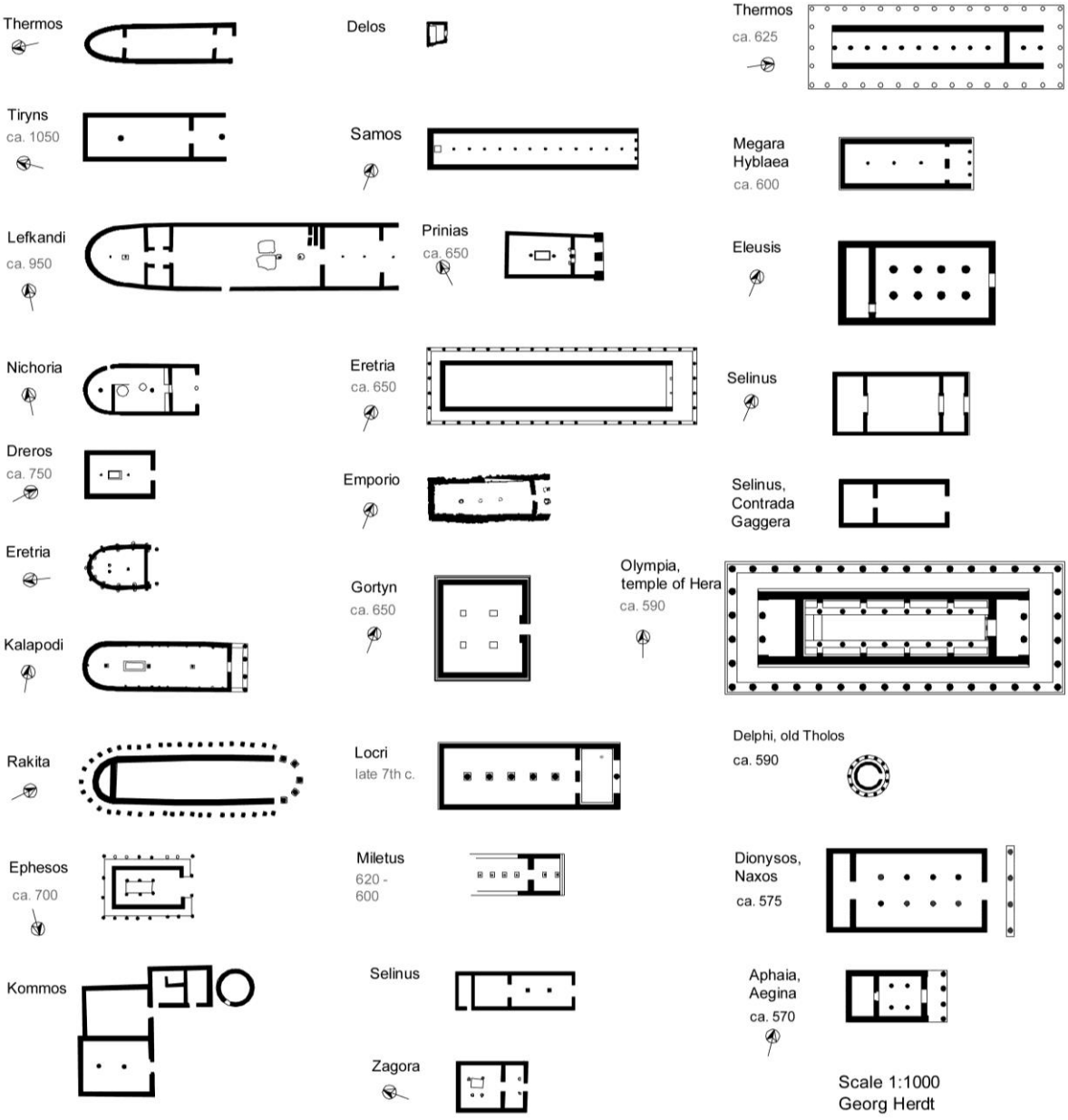


Fig. 0.7: Geometric and early Archaic buildings.

[37] Buschor, Ernst (1930): 16.

[38] Bammer, Anton (2004). The plan of the first temple of Artemis at Ephesus can be found at the top of the middle row in figure 0.7.

Due to the limitations just mentioned on the heights of temples, the elevational aspect of a sanctuary were conquered by elements that were able to express vertical monumentality, and these were the votive offerings. Free-standing columnar dedications could be taller than building-integrated columns, as becomes clear by comparing the two elements. On the small island of Aegina, in the Saronic Gulf south of Athens, both elements survive dating to the beginning of the 6th century BC (Fig. 0.8).[39] The foundations of the Doric styled *prostylos* in the sanctuary of Aphaia measure roughly 7 by 14 m and the height of the entire temple can be reconstructed to about 7 m. The free-standing votive column adjacent measures between 10 – 13 m in total, a truly impressive height by comparison. Moreover, the column predates the *prostylos* significantly; any earlier temple, coeval with the pillar, is likely to be even smaller and since no foundations of such structure have been located, its general existence has to be questioned.[40]

The phenomenon of monumental free-standing columns in the proximity of relatively low temples is not exceptional during the Archaic period. Several sites display a similar relationship including the Heraion of Samos, where an entire row of free-standing columns formed the background of the temple's construction site.[41] The sanctuary of Apollo at Delphi reflects a similar situation. Here almost the entire Archaic monumental free-standing column is preserved, but only very little of the early 6th century temple.[42] Nevertheless, the comparison of the height is clearly in favour of the column. According to the Delphi founding

[39] Gruben, Gottfried (1965). Hoffelner, Klaus (1996). Schwandner, Ernst-Ludwig (1985).

[40] Of course, this conclusion is only valid for the existence of an early temple which has recently been questioned by Dyfri Williams. For discussion see chapter IV.

[41] Schede, Martin (1929): see page 4 for the sanctuary, for the votive columns see page 14, Taf. IX. Schede defines them as older by analysing the stone their foundations had been made of. According to him, these were forming the old border of the sanctuary in the west.

[42] Both of the votive monuments from Aegina and Delphi are similar in size and both are crowned with the same type of sculpture, a Greek sphinx. Amandry, Pierre (1953): As documented in the catalogue, all the drums remain allowing the reconstruction of the entire monument. Bommelaer, Jean-François and Laroche, Didier (1991).

Myth, any construction at Delphi must have been relatively ‘modest’ but the authenticity of a myth has to be called into question.[43]

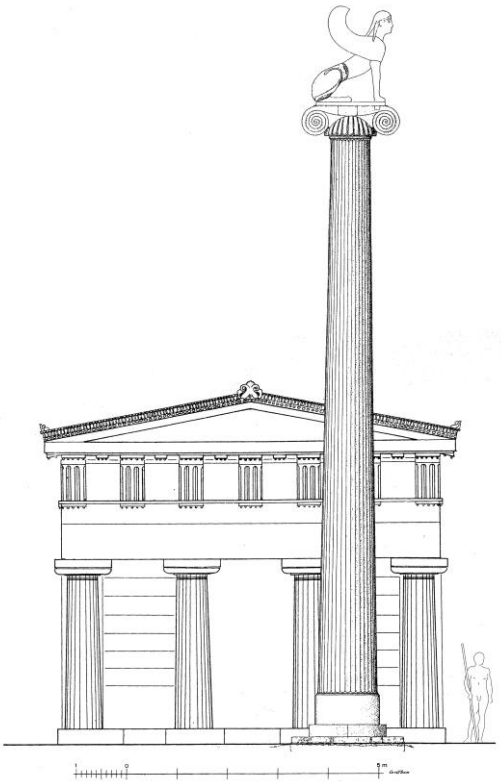


Fig. 0.8: Early Ionic free-standing dedication compared to the older temple of Aphaia, Aegina 570 BC.

By dwarfing the temple, the generally presumed relationship between the “essential accessories” to the “centre of relation” has to be questioned. At the beginning of the Greek building tradition, it was the votive and not the temple, which was visible from a distance. Free-standing columns, towering high, attracted worshippers to the sanctuary and were also one of its main attractions.[44] Indeed, free-standing pillars were of great popularity and could be finished within a short amount of time compared to a building.[45] Commissioning a single column does not only require fewer components, it is also less expensive. With the

[43] The Delphian Myth, the story about the first four temples at Delphi, which is confirmed by Pausanias, Book 10 V 9-13, describes the material they had been made of. According to which, the preceding temples must had been very tiny.

[44] Segal, Phoebe (2010): 18, 152ff.

[45] Hennemeyer, Arndt (2006): Indeed several temples are known for having been built over centuries and/or never reached near to completion.

increase in wealth, the Greek society started to construct temples that out-sized free-standing votive columns. This becomes apparent with the erection of the first *dipteral* temple, which started around 575 BC at the sanctuary of Hera, on the island of Samos, a building which greatly exceeded the previous *Hekatompedon*. This gigantic construction was shortly followed by the temple of Artemis at Ephesus; directing our focus on the building and leaving singular dedications with no chance to compete (Fig. 0.9).[46]

Fig. 0.9: Perspective view at the gigantic temple of Artemis at Ephesus.

The tradition of votive display

Of all the components within a Greek sanctuary the column wasn't necessarily the first to reach monumental height, but it was certainly the first architectural element to do so.[47] Putting more emphasis on free-standing columns

[46] Ohnesorg, Aenne (2007): Frontispiece by Percy Williams Justyne, 1862; *Ephesos and the Temple of Diana*.

[47] Reaching monumentality by height is not exclusive to columns; sculptures of humanoids (*Kouroi*) also make use of size. The dimensions of these colossi are limited to their monolithic construction method; an increase in height followed a significant increase in weight. Despite this difficulty, the Archaic statue of Apollo on Delos reached about 9 m and a statue of Dionysus, abandoned in the quarry of Appollonia, about 10 m in height. A later exception marks the Hellenistic statue of Helios at Rhodes (also one of the Wonders of the World) but this was made of bronze and not stone. Gruben, Gottfried (1997): 287, 298; (2001): 157. Strabo, *Geography* 14.2.5. Plini the Older, *Naturalis Historiæ* XXXIV 41.

and on the development of columnar dedications from wooden posts offers an alternative explanation for the origin of the architectural 'orders'. A free-standing column, as a votive dedication, predating a building integrated post must have had some kind of capital. Is it too much to suppose that a similar element terminated the shaft as it was commonly used for both, architecture and free-standing elements, during the following centuries?

From the 8th century onwards the number of offerings donated to sanctuaries increased massively, creating the need for space and storage.[48] As Svenson-Evers suggests, a temple is ideal for this purpose, at least for the most precious dedications.[49] This use can be proposed for the broad bench inside the tiny building at the sanctuary of Hera at Delos, but its use as a treasury is fairly limited due to its size.[50] In fact, the increase of offerings led to sanctuaries being cluttered by them.[51] This lack of storage is significant, Anton Raubitschek therefore supposes that offerings also may have been placed onto shelves which were erected somewhere in the enclosure.[52] A donor, whose ambition was to stand out of the crowd and away from a collective display may also place his offering on a column. Offerings on top of a column were not necessarily large, and as Raubitschek continues it was: "not the creation of tall votive bearers that triggers the artist to decrease the dimensions of their works the opposite was the case; small sculptures required a tall stand".[53] This is an expensive practice and, as a

[48] The increase in offerings includes all kind of votives, not just architectural ones or offerings displaying architectural ornament. Osborne, Robin (1996): 89.

[49] Svenson-Evers argues that the temple was considered to be a save place since commonly made of stone. Amongst the contents were other precious votive offerings as well as the storage of public and private money. Svenson-Evers, H. (1997): 133.

[50] Coldstream, J. Nicholas (1977): 215. Drerup, Heinrich (1969): 24.

[51] Wilson Jones, Mark (forthcoming): Chapter I. *Paris - Rome - Athenes.* Paris (1982), Athens (1983), Houston (1983), New York (1984); The beautiful watercolours of the artist leave probably the best impression of the appearance of Greek sanctuaries.

[52] Raubitschek suggests this for sanctuaries of the 6th century BC, however the archaeological evidence for wooden shelves of the 6th century BC is naturally limited. It has to be assumed that this method of display was not sheltered by a building and several shelves were probably placed in the open. Raubitschek, Anton (1939): 133.

[53] "Nicht die Bildung besonderes hoher Weihgeschenkträger veranlasste also die Künstler die Masse ihrer Werke zu verringern sondern umgekehrt, die kleinen plastiken forderten eine hohe Aufstellung." Raubitschek, Anton (1939): 161.

matter of course, columnar supports were not just undecorated stands. Several of the capitals of these posts betray similar decorative elements akin to those of their counterparts used for buildings. This practice is well documented for the sanctuary of Athena at Athens, dating to the middle of the 6th century BC. A large amount of columnar offerings can be confirmed for this site.[54] Since the tradition of this element can be recognised, wooden supports may be presumed for older periods.

The custom of a natural feature as part of a sanctuary (such as a tree), associated with divine characteristics also has a long tradition for 'barbarian' sanctuaries.[55] So can the influence from a different culture on early stages of Greek design be ruled out? Joseph Rykwert concludes "… that the association of column and human body is no invention of the Greeks."[56] It was also known to many other cultures, including the Egyptians and Syrians. From this it follows that columns were no invention of the Greeks either. The investigation regarding the use of free-standing columns in the Greek context has in fact to start with free-standing monuments and columns in civilisations prior to the Greeks.

***

[54] Raubitschek, Anton (1949). Kissas, Konstantin (2000).

[55] Trees as a sacred attribute can be determined to almost every culture neighbouring the Mediterranean. Wilson Jones, Mark (forthcoming): Chapter IV.

[56] Rykwert, Joseph (1996): Rykwert attempts to create a connection between the human body and a column, in this context the ambition is reduced to the existence of the column and not to interpret a deeper meaning into its shape or creation, 160.

Chapter I: The Ancestry of Columnar Offerings

"The pyramids, attached with age, have forgotten
the names of their founders."

Richard Buckminster Fuller[1]

Furnishing sacred spaces with columnar markers was customary to several cultures prior to the Greeks. This chapter examines a selection of neighbouring cultures' use of free-standing posts since they form a source of influence for Greek architecture. Monuments of older neighbouring cultures could provide inspiration for Greek artists, who heard about such monuments or witnessed them at firsthand whilst abroad. Products of foreign manufacture found in Greece, bear witness to a traffic of artistic goods during the Archaic period, a fact which also implies a movement of foreign artists.[2] The result would have been a re-invented expression of elements disconnected from their initial context and rationale.[3] Due to this and their age, the original purpose of the monuments influencing Greek artists is likely to be lost, or forgotten, as Richard Buckminster Fuller articulates in the opening quotation. It is not just a question of influence from abroad, Greek culture did not develop on virgin soil.[4] Visible relics of earlier civilisations, particularly that of the Mycenaeans, stimulated creative endeavours and inspired Greek artists to connect their own time with what they believed to be the glorious Heroic Age.

---

[1] Richard Buckminster Fuller, US-American Architect 12.07.1895 - 01.07.1983

[2] Products of eastern fabrication can be found in many Greek sanctuaries from early periods onwards. For the trade of metal bowls of eastern provenance see Hasserodt, M. (2009). On the exchange of artists and goods in architecture see Alzinger, W. (1978). For a rare Archaic wooden baldachin base of eastern fabrication see Mallwitz, A. (1982).

[3] Osborne (1996): 167-168.

[4] The attempt to put Greek material into context led Gottfried Semper (1861-1863) to consider an eastern connection. Eastern material is first published by Layard (1850; 1853) and Owen Jones (1856). Chipiez (1876) considered foreign influences on the orders, especially in collaboration with Georges Perrot (1882-1889). For detail see Rykwert (1996), Burkert (2009) and Wilson Jones (forthcoming): chapter 4.

The influence of these cultures on Greek artistry is controversial, and connections cannot securely be confirmed until the end of the 'Dark Ages'.[5] From the 8th century BC onwards cultural exchanges between Greece and other Mediterranean cultures finds a variety of manifestations. This is documented in early Greek literature by Homer's *Iliad* and *Odyssey*. Both works describe the journey of Greek warriors to the east, indicating an awareness of this region during this period. Putting aside the mythological nature of these works, the Cyclopes of the *Odyssey* are described as having neither ships nor culture.[6] This is to be understood as a contrast to the well-cultured and sophisticated Greek society which, according to Walter Burkert, developed through trade and contact with other civilisations.[7] For the Minoan and Mycenaean cultures, originating on Greek lands, the situation is somewhat different. Burkert's summarizes his own research and those of others (above all the young architect Michael Ventris) to the effect that the similarities in language between Greeks and Mycenaeans shows that "the Mycenaeans spoke Greek".[8] An immediate influence of Mycenaean styles and artwork can also be found in the Greek architectural 'orders'.[9]

Contact between Greeks and 'barbarians', citizens of non-Greek societies, is certain for the 8th century BC onwards. The leading 'barbarian' civilisation neighbouring Greece in the south was the culture of the Egyptians, a dominant culture with a long tradition in art and construction. At the time Greek art started to blossom, Egypt was already a high culture which had survived several peaks and troughs. A cross-fertilisation between these two civilisations would not have been surprising as the Greeks had been welcomed as mercenaries and trading

[5] Burkert, Walter (2009): Burkert discusses this matter in the preface, he argues against the European tradition in seeing the Greek culture developing independently, 9. Also Morris, I. (1994): 43 and (1999): chapter 2, also Astour (1967), Morris S. (1992). Also see Martin Bernal (1987, 1991, 2001) and Marchand 1996.

[6] Homer, *Odyssey* 9-125/129.

[7] Burkert, Walter (2009): Burkert is interpreting a passage by Homer [*Odyssey* 1-3] in which Homer states the necessity to "visit many Humans cities and explore their attitude". For such a venture were ships the medium of journey of Homers choice, 9; a medium which has been "developed" by the Phoenician culture, 15.

[8] Burkert, Walter (2009): Burkert is clear about the similarities in language "Die Myceneaner sprachen Griechisch", 13; Röllig (1992); Kyrieleis, Helmut (2006): 62.

[9] Østby, Eric (2001): 7.

partners.[10] The exchanges between the cultures must indeed have been fruitful; this can be observed in the early Greek settlements of Naucratis and Stratopeda. According to Herodotus, the latter was given to Greek settlers in order to enhance cultural trade between the two civilisations and to educate Egyptians in the Greek language.[11]

Foreign cultural influences upon Greek designs are not limited to ancestral cultures and the south; another route of influence can be traced to Asia and the area to the east of Greece. Greek settlers occupied large regions during the following periods making the Hittite civilisation their predecessor in modern Turkey. This civilisation dominated the northern near east and the Aegean sea around the 2nd millennium BC but by the time the Greek expansion reached these lands, Hattuša (the capital of the Hittites) had faded. When the Greeks claimed these lands some traces must have remained visible for interpretation and, in fact, are still visible today. Despite the difference in age the possibility of direct contact between early Greeks and the Hittite culture remains arguable; it is not certain whether Troy, the city of the mythological enemy of the Heroic Greeks, was the Hittite settlement named Wiluša, which has been located at the spot.[12] If such a proposal can be confirmed, a direct influence from the Hittites would not be surprising. Another potential source of influence is suggested in the *Bible*. The fate of the Israelite culture was already sealed as Greek civilisation developed its potential, but pieces of, or tales about, their extraordinary artwork must have reached the mainland. Contact with Israelite artwork might have been direct or filtered through the Phoenician civilisation which was the main naval trading civilisation at the time and therefore responsible for several goods arriving on Greek shore.[13]

---

[10] Herodotus, *The Histories* II 152 4.

[11] Herodotus, *The Histories* II 154-1/2. The dominant Greek settlement in the Nile River delta was the city of Naucratis. However, the founding date of this settlement is not certain, literal sources of antiquity refer to a date from 749 BC to 560 BC. According to modern research, a date towards the second half of the 7th century BC is likely. Flinders Petrie, W. M. (1886): 5.

[12] Heinhold-Kramer, Susanne (2004): 37, 40.

[13] The Phoenicians were important intermediaries for goods arriving in Greece. Along with original foreign objects came copies which were evidently not produced in the country of

There are various ways in which the Greeks could have come into contact with the element of a free-standing column. Each culture expressed this vertical element in a different way, and none of them did it in the manner of the Greeks. This chapter is concerned with potential influences, rather than precise imitations of the element in its execution or appearance. Prominent cultures would have used this element, and when it came to Greece Greek artists and architects made it their own. This chapter aims to provide the backgrounds for civilisations prior to the Greeks, which seem necessary for the investigation of free-standing columns within Greek society. This overview has to be fairly brief and can only concern a certain amount of civilisations neighbouring the Mediterranean; a complete study being beyond the scope of the present thesis.

Egypt – millennia of cultic development

Egyptian culture not only predates Greek culture, it was also very much alive at the time of contact of relevance, in the 7th and 6th centuries BC. As the two cultures met, at times in a hostile manner and at times in a mutually prosperous one, they instigated a new era of exchange. Since Egyptian culture was more advanced, Greek artists must have been thoroughly impressed by their architectural achievements.[14] Egyptian building tradition was accustomed to a variety of columnar styles.[15] The Egyptians used columns mainly in a building integrated context - as part of buildings, either inside elongated halls or on the outside, framing a courtyard. The use of columns in a free-standing context is rare; nevertheless, free-standing markers within the Egyptian cultic environment did exist.

---

imitation. This can be seen at the: "material and crafting technique, as well as the meaningless hieroglyphic inscriptions which indicate that these are products of Phoenician making". Hasserodt, M. (2009): 337. Osborne (1996): 40.

[14] Influence of Egyptian art becomes particularly visible at sculptural representations of humanoids. In fact, some *kouroi* perhaps adapted Egyptian modular canons. For metrical correspondences see Guralnick (1996, 1978, 1981, 1997), Kyrieleis (1996): 30-37, 68, 108, and for a controversial discussion: Carter and Steinberg (2010). For the Egyptian systems see Iversen, E. (1975) and Wilson Jones 2001.

[15] Phillips, J. Peter (2002).

Fig. 1.1: The *unfinished* Obelisk, Aswan.

At least one free-standing element can be safely identified as a soaring object in Egyptian architecture: the obelisk.[16] As a manifestation of power, not just for a God but also for the ruler, they elevated an electrum-coated *pyramidion*.[17] Aside from the visual presence of an obelisk, their cultic purpose is not certain. Several interpretations are available, ranging from them being described as 'petrified sunrays' to being considered an abstract representation of the *bnbn*-stone.[18] Being a manmade construction the obelisk is obliged to meet certain structural requirements in order for their vertical position to be secured. Most known obelisks are tall, monolithic monuments and the fact that they are very heavy aids the structural stability; in fact, some of the tallest reach a height of 32 meters and a weight of 450 tons (Fig. 1.1).[19] Their proportions ensure a significant surface at their base. This combined with their weight allows for no

[16] The word obelisk for this monument derives from the Greek term ὀβελίσκος and has the meaning of skewer or spit.
[17] Arnold, Dieter (1997): 205.
[18] Arnold, Dieter (1996): 61.
[19] This weight can be estimated for the Obelisk from Aswan, the huge stone broke in the quarry and the project was abandoned in antiquity.

further action other than a stable foundation to be required to provide stability. Despite their enormous weight, several obelisks have been removed from Egypt since antiquity but not everyone was of monumental proportions.[20]

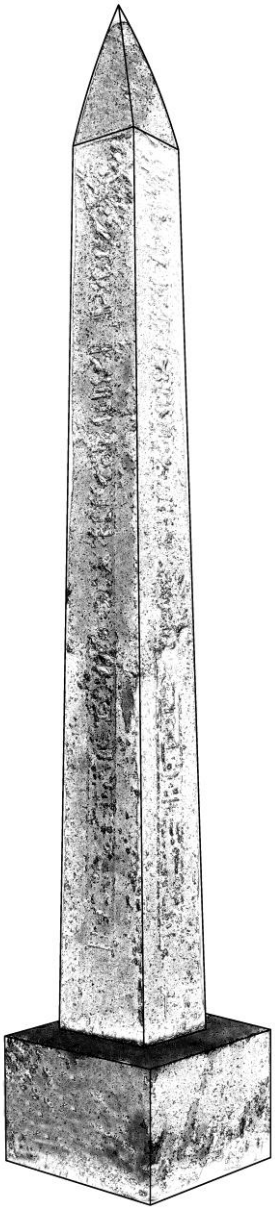


Fig. 1.2: Small Obelisk, Museum Aswan.

It is the size that makes the monolithic element structurally stable but smaller specimens have to be designed differently. Any small free-standing object needs to be fitted in a certain way in order for them to stand. A possible solution for this fitting can be observed at a small obelisk (about as tall as a man) exhibited in the museum of Aswan that incorporates a base block crafted from the same stone as the shaft (Fig. 1.2). This stands in contrast to the classical configuration of a Greek column base, which is usually a separate block to the shaft. The base of the obelisk acts as a counterweight; the additional weight increases the resistance against forces which could overturn the object.[21] This demonstrates that the Egyptians were aware of the necessity for a firm stand even though the use of (Greek) bases was unheard of when constructing Egyptian columns (it should be noted that columns for this culture were nearly used exclusively in a building-integrated context). As this small free-standing marker indicates, Egyptian engineers were able to solve

[20] These monuments were already moved from Egypt in antiquity as the Obelisks of Istanbul and Rome show. These monuments were fashionable free-standing markers for city ensembles, resulting in the erection of various copies as well as to the removal of original obelisks from Egypt. During the 19th century (AD) monumental obelisks were taken to Paris, London and New York. For detail see: *The New York Obelisk* (1993).

[21] Forces to overturn such monument are either wind pressure or the power of men. Whilst the wind pressure can be estimated to a constant force and therefore calculated, as conducted in appendix I, the force applied by men - either intentionally or accidentally, is not predictable.

the structural question of stability by technique rather by size; perhaps similar solutions for pillars with shafts made of perishable materials existed and, in fact, traces of these are documented.

Apart from obelisks, further free-standing objects can be found in Egypt, the most column-like of which is the *Djed* pillar (Fig. 1.3).[22] The symbol of *Djed* is mainly connected to a funerary context and is associated with the god Osiris. However, this free-standing element poses several difficulties. It exists only in graphical reproductions, either in paint or as a relief – not a single *Djed* pillar can be confirmed archaeologically. Due to the absence of archaeological remains and as an object associated to mythology, it can be questioned whether it actually existed. Supposing that such pillars did exist, several suggestions have been made regarding the nature of the material used, including perishable materials.[23] In fact, perishable materials are common amongst Egyptian building traditions. Plenty of remains demonstrating how the original constructions were formed can still be observed in petrified Egyptian building components.[24] Whether in construction or in illustration, the *Djed* pillar was also a free-standing object, and a firmly fitted construction without question as the symbol of *Djed* is the hieroglyph with the meaning of 'stability'.[25] The rendering of these pillars in a graphical form indicates that they were familiar to the Egyptians. The context of such representations shows that these free-standing monuments were used in a sacred context.

[22] Phillips, J. Peter (2002): 122, Fig. 236/237.

[23] Rykwert, Joseph (1996): The construction out of the most perishable material is proposed by Rykwert, a construction out of a reed bundle bound together into a pillar, 311. Rykwert follows a thesis introduced by Walter Andrae in 1930, in which the entire column is constructed out of reed. Andrae points out the similarity between the depiction of the Egyptian free-standing column and a representation of a free-standing column of Sumerian origin. This is notable for its volutes but, for both columns, no archaeological evidence is available. Andrae, W. (1930).

[24] Amongst the building components are most styles of columns, ornamentation and most prominently the cornice which refers to overhanging palm branches on top of the wall. Arnold, Dieter (1996): 15-16 /61.

[25] Phillips, J. Peter (2002): The element of a *djed* pillar is a symbol used in the association with the god Osiris, 25.

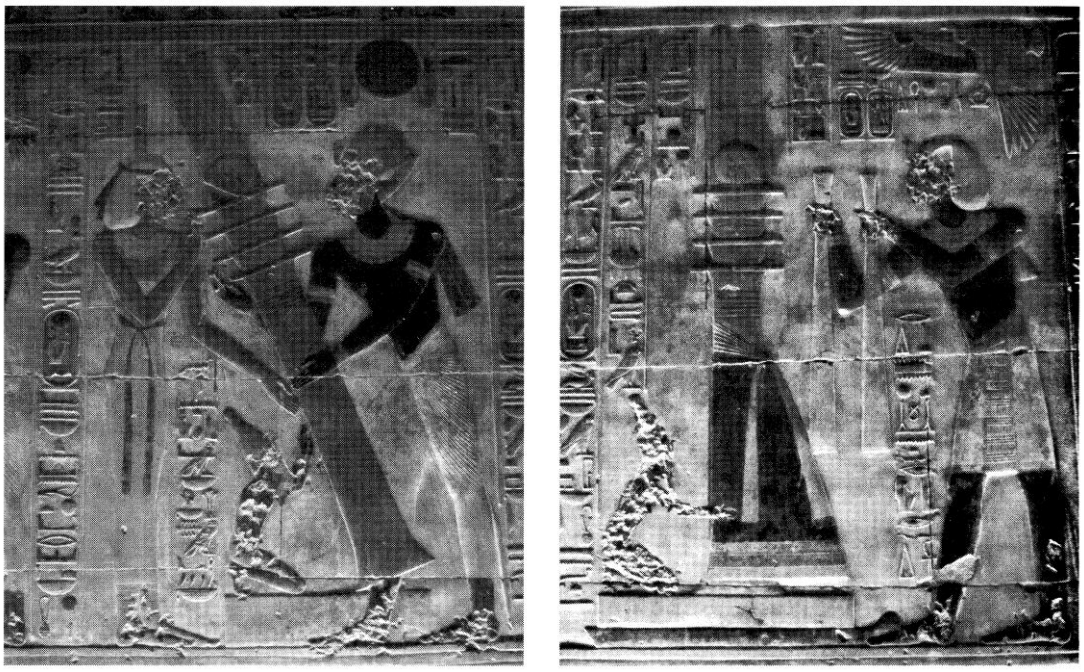


Fig. 1.3: Erection of an Egyptian cult column, a *Djed* pillar. Sanctuary of Osiris, Abydos.

Egypt suffered from a natural shortage of timber, and as a result most constructions were made of either stone or mudbrick but parts of buildings were made of timber. The entrance to a sanctuary is commonly marked by a series of pylons, the Egyptian form of monumental gateways, to which wooden flagpoles are attached at the front.[26] Naturally, nothing of these posts survives, but the sockets for their fitting remain. These timber posts are not in a free-standing context; their structural stability is secured by the massive pylon to which they are attached. Nevertheless, a tall timber shaft used as a flagpole implies the use of timber for vertical shafts in general, including perhaps for free-standing objects (Fig. 1.4), or even a *Djed* pillar.[27] This implication is particularly evident in the post depicted in figure 1.4. The shaft is represented as being very slender, and is crowned with a capital in the shape of a lotus. Despite referring to a mythological scene, the bottom of the shaft seems to illustrate a large bracket. From this, one can read that the artist intended for the shaft to refer to a constructional custom, as to a purely mythological element would not require such a firm fitting.

[26] Arnold, Dieter (1996): 62, Fig 2.
[27] Herrmann, Georgina (1996): Plate 35.

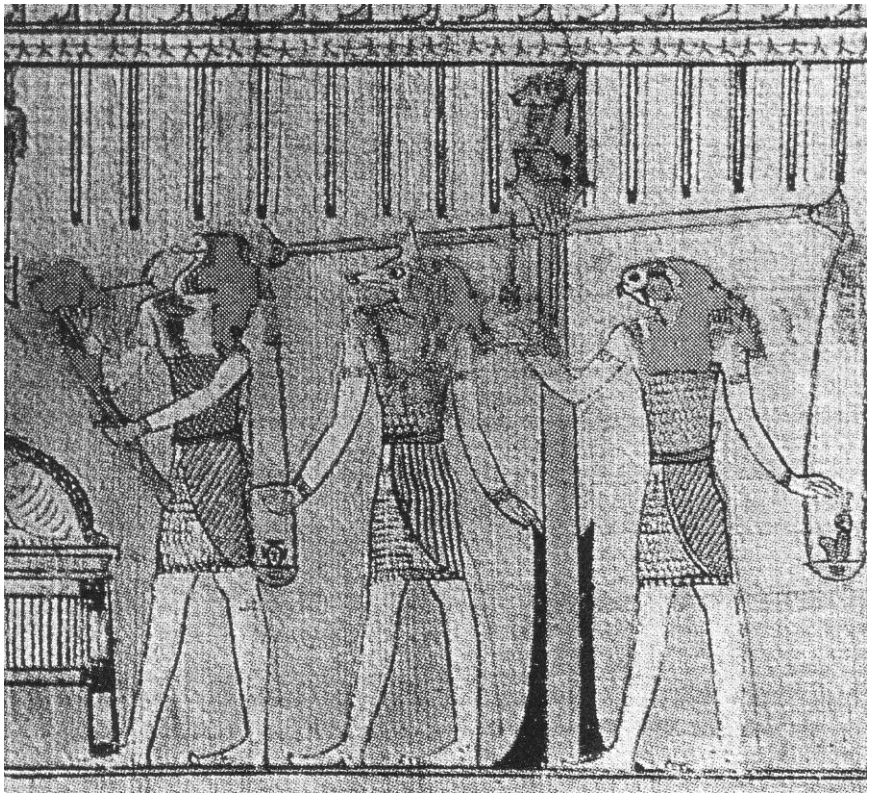


Fig. 1.4: Representation of a free-standing object on papyrus.

Free-standing markers are occasionally depicted in Egyptian sacred environments, a situation which is also true to Greek custom. As concerning vertical elements, another similarity can be pointed out, the importance of a tree as natural component of a sacred area.[28] Similar to Greek culture, trees were of significance, as demonstrated in a relief at the Berlin Museum which displays a date tree associated with divine characteristics dispensing food and drink (Fig. 1.5).[29] Vegetal motifs are important in Egyptian culture and have a long tradition as a part of Egyptian column design. Several different plants have been identified as decorative elements used for the capital of the vertical element. The petals of the capital's floral decoration are not incorporated into the structural system of the building, and are therefore exclusively ornamental. A square block on top of the

[28] In addition to vertical markers both cultures share lakes, groves multiple shrines (or temples) to other deities than the main God of the site. The large precinct at Karnak included several buildings as well as a lake and other features; a situation familiar to Greek sanctuaries as Samos, Olympia, Delphi or Delos, a site which also included the lake at which Leto gave birth to Apollo and Artemis. Arnold, Dieter (1996): 14; Costantini (1999).

[29] Puchstein, Otto (1907): 15.

capital (a kind of *abacus*) connects the shaft with the entablature, leaving the petals free of weight. The variety of plants offered by the designs is enormous; this indicates that the use of a vegetal motif was a natural choice for Egyptian designers. According to Otto Puchstein: "it was not the tree-trunk that found representation, but those constructionally irrelevant marsh plants" – in other words, elements of decoration.[30]

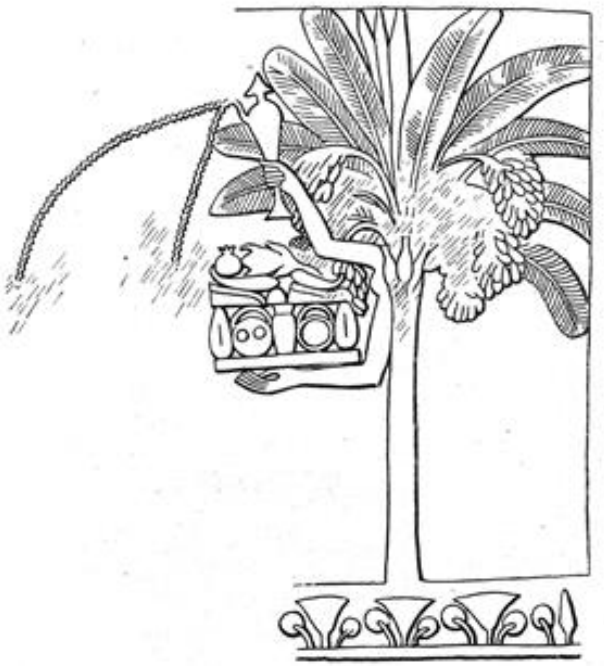


Fig. 1.5: A relief illustrating a sacred tree as part of the Egyptian cult, Museum Berlin.

General similarities in the execution of floral motifs, such as the curls of the volutes of the Ionic capital, caused a lively discussion amongst scholars from the 19th century (AD) onwards.[31] From this, many have assumed that the origin of the Ionic capital lies in Egypt.[32] Despite the correlation in the floral curls, the variety of plants means that it is not possible to pinpoint a singular flower as the origin of the Greek ornament. The issue of the Doric capital is somewhat more

[30] Puchstein, Otto (1907): Puchstein follows A. Rigl who states that Egyptian shapes had to be pleasant in first instance, 22. Riegl, Alois (1893, reprint 1975): 59. On the floral derivation of a range of geometrical motifs see Himmelmann (2005): 12-26.

[31] Indeed the interpretations of this ornament vary; Wurz and Wurz see the palm tree as the origin for the Ionic order whilst Goodyear tends towards the lilly. This plant is challenged by Alois Rigl, who sees clearly the Egyptian lotus as the plant reproduced in architectural ornament. Scholars like Otto Puchstein are more tolerant with the choice of floral motives by interpreting a general floral representation into its shape. Another, recent, proposal by Peter Phillips considers the use of ostrich feathers as decoration. Wurz, Erwin and Wurz, Reinhold (1925). Riegl, Alois (1893, reprint 1975). Goodyear, William H. (1891). Puchstein, Otto (1907). Phillips, J. Peter (2002).

[32] It has to be assumed that the relationship between Ionic curls and Egyptian motives is not as simple as implied by Puchstein (for an example). It has to be noted that Egyptian art forms did not connect the volutes which became the dominant characteristic of the Ionic style. Puchstein, Otto (1907): 47. For a more detailed discussion about the connection of the classical orders with Egyptian art see Wilson Jones, Mark (forthcoming):chapter 4.

complex as it is not possible to confirm an Egyptian ancestry, but one can still find design parallels in spite of this.[33] Not in doubt however is the Egyptian influence over the use of colour in Greek buildings.[34] In fact, Egyptian monuments had an opulent colouring with a variety of motifs, ranging from stars painted below the ceilings to the abstract patterns at the cornices. The similarities in the painted ornaments of architectural elements are convincing indeed; Josef Durm stated in 1881 that, concerning the colouring, "the Greeks followed Egyptian custom and Asiatic taste".[35]

It becomes clear that Egypt was in some way or another guiding for the development of Greek architecture as several details of Greek designs can be traced to the artistic trends of this most ancient civilisation. Since both Greek and Egyptian culture made use of free-standing objects in a similar manner an ancestral link for their design can be proposed. Egyptian free-standing elements are not as refined as the votive columns found in Greek antiquity, but they are prominent enough to serve as a source of inspiration. Egyptian art therefore cannot be seen as an archetype that was to be imitated but one can certainly note similarities in the principle of erecting vertical markers as expressions of religious devotion and secular power.

The Hittite empire – a misunderstanding?

The connection between Greek and Hittite culture is of a completely different nature. At the time Greek art arose, the Hittites were not in decline, rather they were long lost. It can be inferred that there was some form of earlier direct contact, as it is possible that the city of Troy may have been the Hittite city

[33] The tomb of Beni Hassan has often led to the speculation of a possible ancestor of the Doric style and therefore was named "protodoric". In the opinion of Durm was no doubt about a connection between the countries from an early period onwards, Durm, Josef (1881): 62. For further aspects of influence see Wilson Jones, M. (forthcoming): chapter 4.

[34] Semper, Gottfried (1851): As investigated by Semper the Greek temple was not white but coated in several colours. Coloured Building components were also already described by Vitruvius in *de architectura*.

[35] Durm, Josef (1881): 117.

of Wiluša.[36] If this association is correct, then not only does one have to presume a direct influence of the Hittites on the Greeks, but also that the latter played a significant role in the destruction of Hittite culture. This proposal is mainly based on the epics of Homer, and on inscriptions surviving at Greek sanctuaries which identify several small objects of Hittite provenance as memorabilia of this Heroic past.[37] Even though Hittite culture disappeared towards the end of the 2nd millennium BC (with the upcoming Dark Ages), it left traces in the territory which would have been available for interpretation by the Greeks settling in what they came to call Ionia.[38]

Fig. 1.6 a/b: Columnar elements shown as part of a shrine? On a relief in Turkey (a) and on a Phoenician bowl (b).

[36] Hertel, Dieter (2003): As Hertel points out, the association of Wiluša with the Homeric city of Troy is highly in doubt. Hertel proposes an interpretation of the Homeric tales as myth, with this theory he opposes the concept of Heinrich Schliemann and Manfred Korfmann, the excavators of Troy. Korfmann, Manfred O. (2006).

[37] Shaya, Josephine (2005): Shaya points out in her article the importance of ancient heirlooms as donations in sanctuaries.

[38] In fact, similarities in the construction technique can be found as the use of stone *orthostates*. For detail see Frankfort (1954); Akurgal (1968): 79; Naumann (1971); Wright (2000): 75, who also notes precursors for Greek anathyrosis.

Hittite artwork remained visible during the period of Greek occupation of the area, as can be seen at the rock-cut relief of Karabel, near the Greek settlement Smyrna.[39] In the *Histories* the Greek writer Herodotus attributes this relief erroneously as commissioned by the Egyptian ruler Sesostris.[40] Nevertheless, columns or column-like symbols appear on Hittite seals, some with a striking resemblance to Ionic columns (Fig. 1.6a).[41] According to Erwin and Reinhold Wurz, this seal shows "small pillars arranged in pairs, on which the winged sun-disk often lies or hovers above. This composition, […], because of this it resembles a small temple (*Aedicula*) and has usually been interpreted in this manner."[42] Such foreign representations of shrines or temples were known to Greeks, as shown by the relief of a bowl of Phoenician provenance, discovered at Olympia (Fig. 1.6b).[43] Can such a representation have influenced the development of Ionic style? As the Hittite language became decipherable in the 20th century (AD), it became increasingly evident that the symbols shown on such a seal were not the representation of a temple.[44] Ekrem Akurgal concludes that the elements shown should be separated into distinct symbols: " … at the top the winged sun emblem symbolizing royalty and, supporting it on the left and right like columns, the sign for 'great king'. […], the elongated triangle signifies 'king' and upon it the sign whose two ends are curled means 'great'".[45] However, such does not disqualify the interpretation by a foreign culture as a temple, Greek artists of the 7th and 6th century BC (the period in which the Ionic canon was set) were probably as unable to read these inscriptions as scholars of the 19th and early 20th century

[39] This particular rock cut seal was erroneously linked by Herodotus to Egyptian origin. Akurgal, Ekrem (1961): 6.

[40] For the original text see Herodotus, *The Histories* 2.102-103. Texier, Charles (1862).

[41] Akurgal, Ekrem (2001): 105, fig 49..

[42] Wurz, Erwin and Wurz, Reinhold (1925): "kleine je zu zweien zusammengestellte Stützen, auf denen öfters die geflügelte Sonnenscheibe ruht, oder über denen sie schwebt. Diese Komposition, […], sieht dadurch wie ein kleines Tempelchen (*Aedicula*) aus und ist gewöhnlich auch in diesem Sinn gedeutet worden.", 90.

[43] Marcoe, Glenn (1985): The imagery on the bowl of about 700-750 BC displays a similar concept; a humanoid in between two posts, crowned by the winged sun, 317, plate G3.

[44] The Hittite language was made accessible in 1915 by Friedrich Hrozny and the inscription of Karabel was translated in 1998 by John David Hawkins. Burkert, Walter (2009): 10. Burkert, Walter (1991): 165f. Ehringhaus, Horst (2005).

[45] Akurgal, Ekrem (2001): 84.

(AD). Perhaps Greeks interpreted these symbols according to their own understanding as emanating from the Heroic Age. In this way such representations may have affected the development of Greek art.

This misunderstanding aside it is significant that free-standing structures can be found in Hittite art. The dominance of the Hittite empire came to an end with the destruction of Hattuša at the end of the 2nd millennium BC, but this disaster did not completely impede artistic progress. Late Hittite settlements such as Tell Halaf remained active in the arts and improved upon forms inherited from the period of the 'Great Kingdom'.[46] In an example of such work, a free-standing structure is represented on a relief, depicting a man on a ladder (Fig. 1.7).[47] The vertical feature shown is probably a date palm but is scarcely recognisable as a tree, while the two curling volutes recall the shape of an Aeolic capital rather than a vegetal crown. It is only the depiction of the harvest scene that suggests these forms represent a tree, as concluded by Akurgal: "it becomes clear the Aeolic type column capital originates from the date palm".[48] The similarities to a free-standing column are undeniable, and it is likely that the artist intended to refer to both a sacred tree and to a dedicatiory column of the Aeolic style.

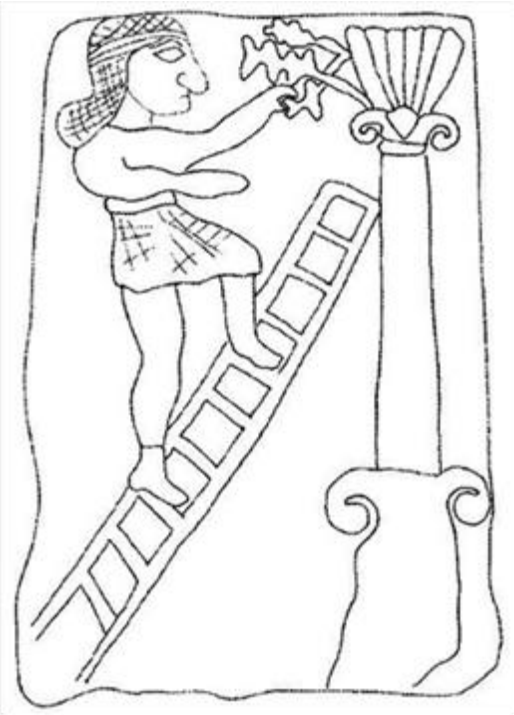


Fig. 1.7: Hittite relief of a man pruning a date palm in the shape of an Aeolic column.

One surviving object from Hittite culture which can be associated with a free-standing structure is the large sculpture of a bird-headed spirit found at Tell

[46] Akurgal, Ekrem (2001): 210.
[47] Akurgal, Ekrem (2001): 243, figure 51b.
[48] Akurgal, Ekrem (2001): 243. The date palm is also preferred by E. and R. Wurz for the curls of the symbol of the seal. Wurz, Erwin and Wurz, Reinhold (1925): 4.

Halaf (Fig. 1.8).[49] This sculpture dates back to the 8th century BC and is carved from the same block as the petal crown elevating it. As nothing remains of the rest of the monument it is difficult to estimate its original height its purpose. Apart from the use as crowning element of a free-standing column, a low pedestal also remains an option.[50] The petal crown seems more likely on top of a column, which finds support in a second capital just showing the remains of another birds' claws.[51] This demonstrates that free-standing structures are likely to be prestigious dedications for late Hittite settlements such as Tell Halaf.

Even though it is difficult to be certain, the situation of the Hittites shows that relics of previous periods remain influential for younger civilisations. It is the proximity of the two cultures which in this case allowed Greek settlers to readily interpret traces of Hittite influence as they occupied Ionia. Carved remains of the unfamiliar and mythical writing of Hittite script may have had a role in inspiring Greek artists to form ideas of their own ancestry. Smaller objects surviving of Hittite origin may also have served as heirlooms and inspired the development of Greek constructions.[52] Despite the demise of Hittite culture echoes of its artistic produce can be found in Greek works. The survivors of the destruction of the capital Hattuša maintained their building tradition but adapted the traditional ornament to the styles of their own period. It can be deduced then, at least during the 7th century BC, there was some immediate contact between the surviving offspring of the Hittites and the Greeks.

[49] Oppenheim collection, Berlin. Akurgal, Ekrem (1992): 33-52. Wesenberg, Burkhardt (1971): 29-33 abb. 71-73.

[50] Wesenberg, Burkhardt (1971): At the environment of the sculpture a shaft displaying fourteen facets has been found suggesting a column, though a definite association cannot be made, 33. Freiherr von Oppenheim, Max (1931).

[51] Wesenberg, Burkhardt (1971): Of the second capital little remains, however the matching sockets and remains of bird claws allow a definite association, 29/33.

[52] Amongst other heirlooms the inscription documenting the presence of the helmet of Paris at the sanctuary of Lindos is a most notable relict of the Trojan War. Shaya, J. (2005): 425.

Fig. 1.8: Sculpture of a bird of prey crowning a vertical element, Tell Halaf.

The Israelites – a literary history

In spite of their enforced exile, the culture of the Israelites survived and left a legacy in the form of an outstanding written work, the Old Testament of the Bible. Its authenticity often cannot be confirmed archaeologically due to the shortage of remains but an analysis of the text gives an idea of the use of free-standing columnar elements and, perhaps more importantly, the text is explicit about the materials used. At the time that the kingdom of the Hebrews reached its peak, with the construction of the temple of Solomon at Jerusalem (about 957 BC), contact with the early Greek civilisation could have had a seminal impact on the developing culture of the Aegean.[53]

The two most prominent free-standing columns constructed in an Israelite context, as documented by the Bible, were named "Jachin" (**יָכִין** *jākhîn*) and "Boaz" (**בּוֹעַז** *bo'az*):

[15] και εχωνευσεν τους δυο στυλους τω αιλαμ του οικου οκτωκαιδεκα πηχεις υψος του στυλου και περιμετρον τεσσαρες και δεκα πηχεις εκυκλου αυτον και το παχος του στυλου τεσσαρων δακτυλων τα κοιλωματα και ουτως ο στυλος ο δευτερος.	[15] For he fashioned the two pillars of brass, eighteen cubits high apiece: and a line of twelve cubits compassed either of them about.
[16] και δυο επιθεματα εποιησεν δουναι επι τας κεφαλας των στυλων χωνευτα χαλκα πεντε πηχεις το υψος του επιθεματος του ενος και πεντε πηχεις το υψος του επιθεματος του δευτερου	[16] And he made two chapiters of molten brass, to set upon the tops of the pillars: the height of the one chapiter was five cubits, and the height of the other chapiter was five cubits:[54]

These two columns, loaded with meaning (Jachin means 'firmness', Boaz means 'fortitude'), were placed in front of the temple of Solomon at Jerusalem and date to the same period as the building. These two pillars have to be interpreted as free-standing columns as their shafts are crowned with some kind of capital or column-head. Despite the detailed description of the element terminating the shaft, the

[53] As a construction being of higher age, Solomon's temple may have influenced Greek temple design. For detail see Mazar (1990): 184. Information about the building in general is documented by the Bible: I *Kings* 6-7 and II *Chronicles* 2-4. For more detail considering the appearance of the temple see: Busink (1970) and Zwickel (1999).

[54] *Bible*, 1 Kings 7:15-16.

shortage of comparable capitals for column styles used by the Israelites does not allow their design to be reconstructed (Fig. 1.9).[55] According to the text, the height of the two markers can be precisely reconstructed: each shaft measures about 9 m terminating with a capital, increasing the columns height by 2.5 m. On top of the columns Hiram places decorated 'studs' further enlarging the monumental columns by another 2 m.[56] With a total height of 13.5 m, the columns are enormous for their time, in fact the height of the two 'brothers' is comparable to the height of the temple nearby.[57] The text also explicitly states that both columns were made in bronze with a diameter of about 2 m, and were constructed by a man named Hiram of Tyre. As the Bible explains, Hiram was a specialist in metal work, and he was given the responsibility of creating several other dedications and interior designs of the temple.[58] This passage in the Bible implies shared development of artistic forms for architecture and small dedications, a situation which explains the appearance of similar designs for furniture and architecture.[59]

The appearance of free-standing columns in Israelite sanctuaries is not surprising considering that the Bible associates columns literally with the divine. Moses leads his people through the desert and the LORD guides them on their way to the Promised Land, appearing in the form of two different columns:

[55] *Bible,* 1 Kings 7:13-22. Despite the detailed description of the twin columns in Kings 7, the renaissance interpretation of the design for the capitals was Corinthian. Despite the implausibility of a refined Corinthian capital for that period, it is likely that these two posts are constructed in a similar method as votive dedications within the Greek context later in the millennium. Bauks, Michaela (2010).

[56] These are the measurements given by the text however texts as old as the Bible might reflect corruption and therefore not as accurate. For discussion on this matter see Zwickel, Wolfgang (1999):, 114. *Bible,* 1 Kings 7:13-22. The txt says that the studs are decorated with rows of pomegranates and shaped alike a Lilly.

[57] Zwickel, Wolfgang (1999): 116. The temple is supposed to be slightly taller, 30 cubits in total instead of 27. *Bible,* 1 Kings 6:2.

[58] *Bible,* 1 Kings 7;40-45. Hiram created most of the artistic monuments of the courtyard amongst which are various stands, pots and bowls.

[59] The similarity in artistic execution has already been recognised in the 19th century AD. Most prominently, Karl Bötticher refers to the tectonics of the furniture and the tectonics in architecture as deriving from the same source: Bötticher, Karl (1852): 3. This theme is discussed in *Der Stil* by Gottfried Semper. For a more recent discussion on this matter see Wilson Jones, M. (forthcoming).

[21] ο δε θεος ηγειτο αυτων ημερας μεν εν στυλω νεφελης δειξαι αυτοις την οδον την δε νυκτα εν στυλω πυρος	[21] And the LORD went before them by day in a pillar of a cloud to lead them the way, and by night in a pillar of fire to give them light, to go by day and night.
[22] ουκ εξελιπεν ο στυλος της νεφελης ημερας και ο στυλος του πυρος νυκτος εναντιον παντος του λαου	[22] He took not away the pillar of the cloud by day nor the pillar of fire by night from before the people.[60]

As the text delineates, the LORD appeared at day in the shape of a στυλω νεφελης, a column of clouds, then at night as a στυλω πυρος, a column of fire.[61] According to the use of this term, it can be supposed that columns in sanctuaries also embody aspects of divinity. The erection of a columnar marker also occurs to honour the presence of the divine in the Bible. At the spot at which the LORDS' voice appeared to Jacob, he erected a marker and poured a libation upon it:

[14] καὶ ἔστησεν ιακωβ στήλην ἐν τῷ τόπῳ ᾧ ἐλάλησεν μετ' αὐτοῦ στήλην λιθίνην καὶ ἔσπεισεν ἐπ' αὐτὴν σπονδὴν καὶ ἐπέχεεν ἐπ' αὐτὴν ἔλαιον.	[14] And Jacob set up a pillar in the place where God spoke with him, [even] a pillar of stone; and offered a libation upon it, and poured oil upon it.[62]

The Bible specifies that this vertical marker was created of stone; it shows that the activity of setting up a vertical marker at sacred spaces was part of their culture. The combination with the activity of pouring a libation displays parallels to the Greek culture. The term used to describe the manifestations of the divine as well as the marker is στήλη, a term that is also used to describe free-standing columns – as it is used for Jachin and Boaz.[63] With this interpretation of the literal source comes the difficulty in putting the work into its context. The existing editions of the Bible are not coeval to Greek architecture and therefore the investigation has to be treated with care; however it is difficult to estimate the impact such a

[60] *Bible,* 2nd book Moses 13:21-22.

[61] The appearance of God is not exclusively to the element of a column, the LORD appears also as a natural feature (as a shrub) or as a voice. However, most of these manifestations can also be found within Greek sanctuaries.

[62] *Bible,* 1st book Moses 35:14.

[63] The Greek term στήλη is mainly used to describe a vertical marker in a free-standing context.

linguistic duality would have had on Greek artists as it came to furnish their own sanctuaries.

Another use for free-standing markers in the Israelite tradition is the erection of funerary markers.[64] When Jacobs' wife Rachel died, a pillar was set up upon her tomb:

[20] καὶ ἔστησεν Ιακωβ στήλην ἐπὶ τοῦ μνημείου αὐτῆς· αὕτη ἐστὶν στήλη μνημείου Ραχηλ ἕως τῆς σήμερον ἡμέρας	[20] And Jacob set up a pillar on her tomb; this is the pillar on the tomb of Rachel, until this day.[65]

The Bible does not betray information regarding the material nor the design of this vertical marker. Like the previous pillar erected by Jacob, stone seems likely given the documented durability of the pillar.

Before their arrival at the Holy Land, the Israelites were a nomadic people, but the construction of the temple, tied to Jerusalem, may have had a predecessor. During their exodus from Egypt, Moses and his people used a temporary structure in lieu of a temple.[66] The construction of this tabernacle is described in detail, the Bible describes them as five posts [πέντε στύλους] made out of gilded acacia-wood and placed onto stands made of silver for the support of the tent.[67] As a temporary structure, it can be assumed that the posts were kept in position by use of guy ropes and that the base was used as a means of increasing the lower diameter, rather than as a load-bearing counterweight. Timber seems to be the natural material for the posts of the temporary structure, as it was commonly supposed for the constructions of the 2nd millennium BC. Despite this detailed description, one must question the existence of such an early cultic construction during the exodus; it is possible for instance that the tabernacle was only inserted

[64] This passage also shows the common custom to erect a stele or a column in remembrance of deceased. Detailed information about the appearance of Greek terms in Greek literature is given in chapter II.

[65] *Bible,* 1st book Moses 35:20.

[66] The tent structure remained of cultic value even after the building of the temple. It is believed to be stored within the sanctuary until the destruction of Nebuchadnezzar II.

[67] *Bible,* 2nd Book Moses 26 and 36 .

into the text after the destruction of the temple at Jerusalem, at the time as the Israelites became a nomadic society once again.[68]

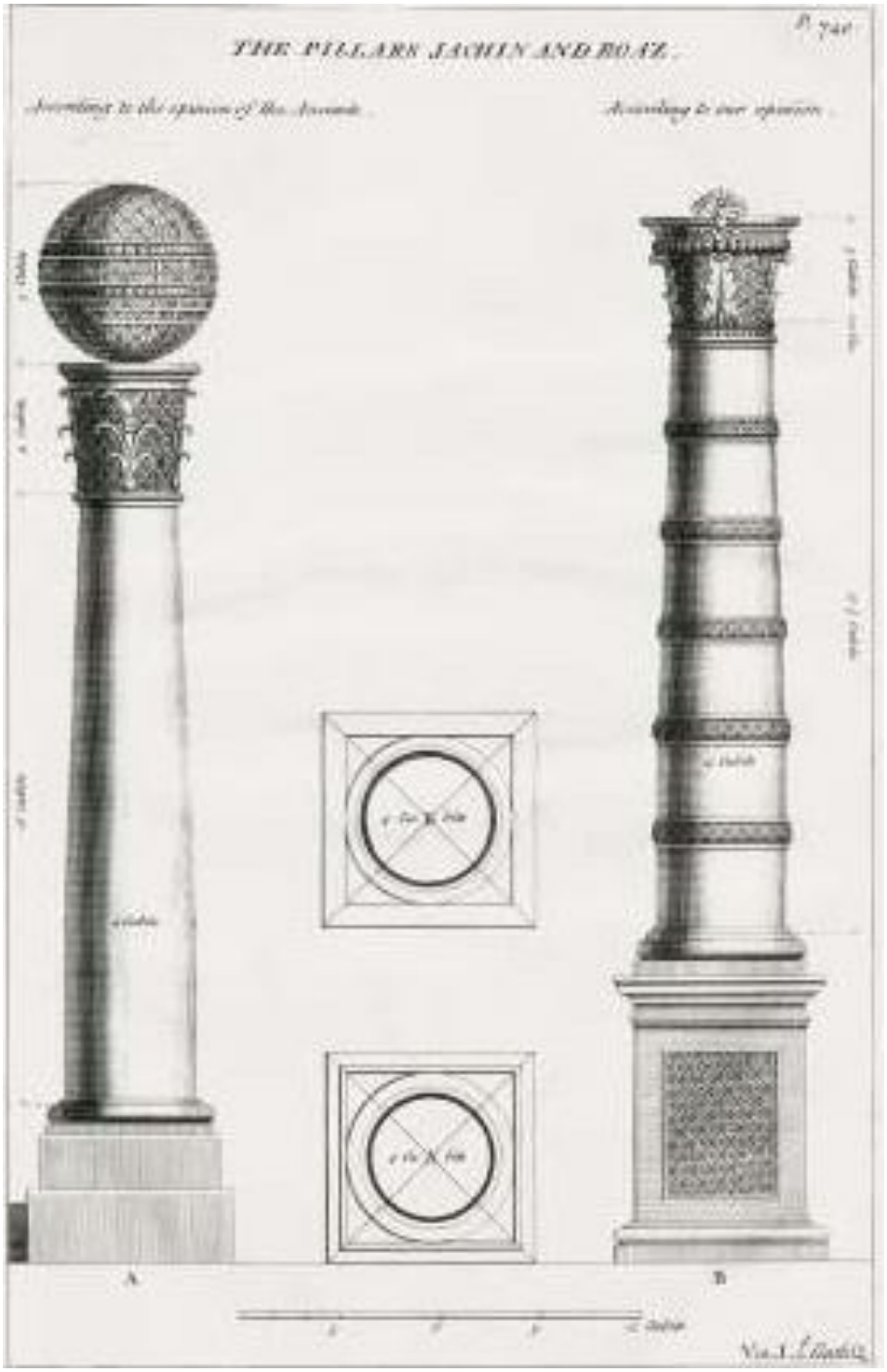


Fig. 1.9: The twin columns Jachin and Boaz according to the ideals of the renaissance.

[68] RGG (4th ed.): 1735.

The destruction of Jerusalem in the early 6th century BC by the Neo-Babylonian king Nebuchadnezzar II was a severe blow for Israelite culture, at a time when Greek culture was about to reach its full potential. After the siege of Jerusalem, the king burned down the temple and took the twin columns to Babylon.[69] Crafted from metal, the two columns were not only special monuments for their time but more significantly, as the Bible demonstrates, were of particular importance for the Israelites. The text confirms that these structures were characterised with divine attributes, and the construction of large-scale monuments such as Jachin and Boaz enhances the significance of columns as sacred furniture within the context of a sanctuary. Israelite culture was still alive at the time that Greek culture started to prosper, and it stands to reason that the Greeks would have been exposed to Israelite design through various small artefacts brought across the Aegean Sea. These artefacts would be accompanied by tales about the architectural accomplishments of the glorious city of Jerusalem, with its elongated temple and free-standing metal columns.

The Minoans – architectural or mythological influence

The leading civilisation in Crete during the 2nd millennium BC has been called Minoan by modern scholars. This island in the southern part of the Mediterranean Sea had relatively little significance in the development of Greek architecture, but within Greek theology Crete held a special position. According to Hesiod, Zeus, the highest god in the pantheon of the Greek gods, was born in a cave on this island.[70] The Minoans shared the fate of the Hittites – at the time that Greek culture was starting to evolve, the palace culture of the Minoans had already been lost – but their ruins remained visible and also had an impact on Greek art as many myths were created about the island.[71] It is difficult to estimate to what extent these ruins had an influence and whether these were still standing during the Greek periods. Nevertheless, Minoan art is not limited to their

[69] *Bible*, 2 Kings 25.

[70] Hesiod, *Theogony* 453-491.

[71] Probably the most popular myth allocated to Crete is the story about Theseus and the Minotaur. Plutarch, *Life of Theseus.* As Plutarch states in his opening, he is aware of the mythological aspect of the tale that came to him via various sources.

architecture and other sources of influence are representations of free-standing dedications ranging from small objects such as seals, to larger objects such as paintings.

Fig. 1.10: Free-standing pillars shown on Minoan and Mycenaean seals.

The manner in which these pillars are represented depends on the medium; on very small objects such as rings and seals the images are tiny. Due to their size, these show a certain variety regarding the use of the free-standing posts used in Minoan culture (Fig. 1.10).[72] All of the posts illustrated are shown to be in a free-standing context by either the execution of the capital or the presence of a dedication. The single exception is shown by figure 1.10e, a seal from Mycenae, which could also refer to a building-integrated post.[73] When shown as a complete column, the presence of a base can be observed – this is a bulge or torus-shaped object on which the shaft is centred (Fig. 1.10f) or otherwise positioned (Fig. 1.10a). The large pillar in figure 1.10a, shown behind a little deity emerging from above, appears too tall to fit the surface of the seal; its crowning element is not shown on the object. The tapered free-standing pillar is shown to be significantly taller than the enclosed tree or the building on the right, a comparison which demonstrates the pillar's importance. The most characteristic free-standing marker of Minoan culture is the double axe capital, a ceremonial column which is shown at the top of two posts in the background (Fig. 1.10b/g). The representations on these seals offer a rare insight into the adornment of Minoan cult spaces, indicating that free-standing posts were popular.

The free-standing pillar with a double-axe capital can also be found in paintings. A small stone sarcophagus from Hagia Triada, dated to the 14th century BC, displays three of these markers at its flanks, two on the A side, one on the other (Fig. 1.11).[74] The amount of space available on the sarcophagus allows for more detailed representations, rather than just abstractions. Each pillar is placed on a trapezoidial base made of either one (Fig. 1.11b) or two components (Fig. 1.11a). The artist seems to understand the necessity of a counterweight base for small free-standing columns. Their shafts taper dramatically, finishing in a yellow

[72] Figure 1.10 shows a compilation of seals from the Minoan and Mycenaean cultures. Figures a, b, f and g are of Minoan provenance c, d and e of Mycenaean. (a) Hägg, Robin (1986): 57, Abb. 7. (b) Rutkowski, Bogdan, (1981): Abb. 27 -7. (c-g) Mylonas, George (1966): 123 (Ring 16, Ring 15), 124 (20, 43 and 44).

[73] Wesenberg, Burkhardt (1971): 18, Taf. 54.

[74] The object is exhibited at the Museum of Heraklion, Crete.

painted double-axe with a bird on top.[75] Due to the difference in colour, the capitals appear to be crafted out of a different material to the shafts (bronze perhaps), these are either green (Fig. 1.11a) or brown (Fig. 1.11b) suggesting wooden as material of construction. This assumption is additionally bolstered by the shaft's sharp tapered shape, as well as the rippled line on the green shafts at figure 1.11a, which evokes the bark of a tree or a leaf-covered branch.[76]

Fig. 1.11 a/b: Free-standing ceremonial axes depicted on a sarcophagus from Hagia Triada, side A and B.

The double-axe capital was prominent in Minoan culture; its existence can be confirmed by the discovery of columns adorned with this element (Fig 1.12).[77] A column of any height, crowned with such a large bronze feature had to withstand a certain amount of wind pressure. This could either be achieved by a counterweight, as a base, or by forcing the shaft firmly into the ground. According to the paintings on the Hagia Triada sarcophagus, the use of bases can be supposed for this purpose.[78] The diameter of the shaft hole on the double axe

[75] Birds are a common element on top of free-standing posts, in the Minoan context birds can be seen on top of the capitals of small clay models displaying a free-standing context; An object that is also exhibited at the Museum of Heraklion, Crete.

[76] Rigl, Alois (1893, reprint 1975): Golden petals have been found in Mycenaean context which could have been attached to the wooden core of such a shaft, 143, fig 64/65. Even though a decoration of the shaft after its erection is plausible it has to remain hypothetical.

[77] The object is on display at the museum of Heraklion, Crete.

[78] A direct association of the capitals and the Hagia Triada sarcophagus is not possible since the two objects are not dated to the same period. This concern is enhanced by deviations between the exhibited capitals and the posts depicted on the sarcophagus, as this indicates that these don't refer to an identical reproduction of the same style of pillars. Nevertheless, the painting

capital suggests a tapered point, corroborating the theory of a timber construction for the shafts of this monument. Despite being crowned with a large axe, the columns were entirely ceremonial and had no practical use as the thickness of the axes confirms. Whether erected in a common area or as part of a sacred space, this type of dedicational column may have played some role in the rituals of the Minoans.

Fig. 1.12: Free-standing ceremonial axe columns, Museum Heraklion.

on the sarcophagus gives a general impression of how free-standing vertical elements were used and indicates how these were constructed. It has to be noted that the construction technique for both artefacts is similar – by placing a (wooden?) shaft into a base.

With the evidence provided, it is clear that free-standing columns existed in Minoan culture. The remains of these columns can be confirmed as representations on seals and rings as well as real-life constructions. Based on the form and coloration of the shafts, it is reasonable to assume that the columns were constructed with a timber shaft. Although it is very unlikely that these wooden structures would have still been standing in the 1st millennium BC but objects displaying this prominent element or fragments of existing columns may have been accessible allowing plenty of space for inspiration for the upcoming Greek architects and artists.

The Mycenaeans – direct ancestry

Greek civilisation did not just inherited the land of the Mycenaeans, Greek settlements were also erected on the existing foundations of Mycenaean ruins.[79] The revival of Mycenaean sites did not occur without significant changes, as the Dark Ages forged too long a gap for Greek designers of the Geometric period to simply carry on the ancestral building tradition.[80] Nevertheless, aside from similarities in the language, similarities in the architectural expression of the two cultures can be observed. As briefly discussed in the introduction, the Mycenaeans not only played an instrumental role in the development of Greek architecture, but several of their designs reappear in specific Greek ornaments. The use of columnar objects also retains some cultic importance and is often represented in a spiritual environment.[81] Scattered fragments of various purpose formed a rich source of inspiration and motivation for Greek architects to follow the example of an ancestral culture which had occupied the land before them. Furthermore, the

[79] At current interpretation, the most prominent site at which a revival of Mycenaean building tradition is visible the palace at Tiryns. Drerup, Heinrich (1969): 17-18. Gruben, Gottfried (2001): 18-19. Østby, Eric (2001). The continuation of an area from the Mycenaean to the Geometric period is not limited to architecture, it can also be observed for essential components of a sanctuary. This becomes particularly visible at the earliest altar of the sanctuary of Apollo Maleatas, near Epidauros, which is believed to be built on top of a Mycenaean sanctuary. Kyrieleis, Helmut (2006): 63; Wace, A. J. B. (1949).

[80] Wilson Jones, Mark (forthcoming): chapter 4.

[81] The use of columnar elements is of certain significance within the Mycenaean culture as free-standing elements recur frequently within their iconography. The material was already available in the beginning of the 19th century and is brought into context by Arthur Evans in 1901 in his essay: "The Mycenaean tree and pillar cult and its Mediterranean relations".

column held an exceptional position in Mycenaean culture, as surviving remains demonstrate.

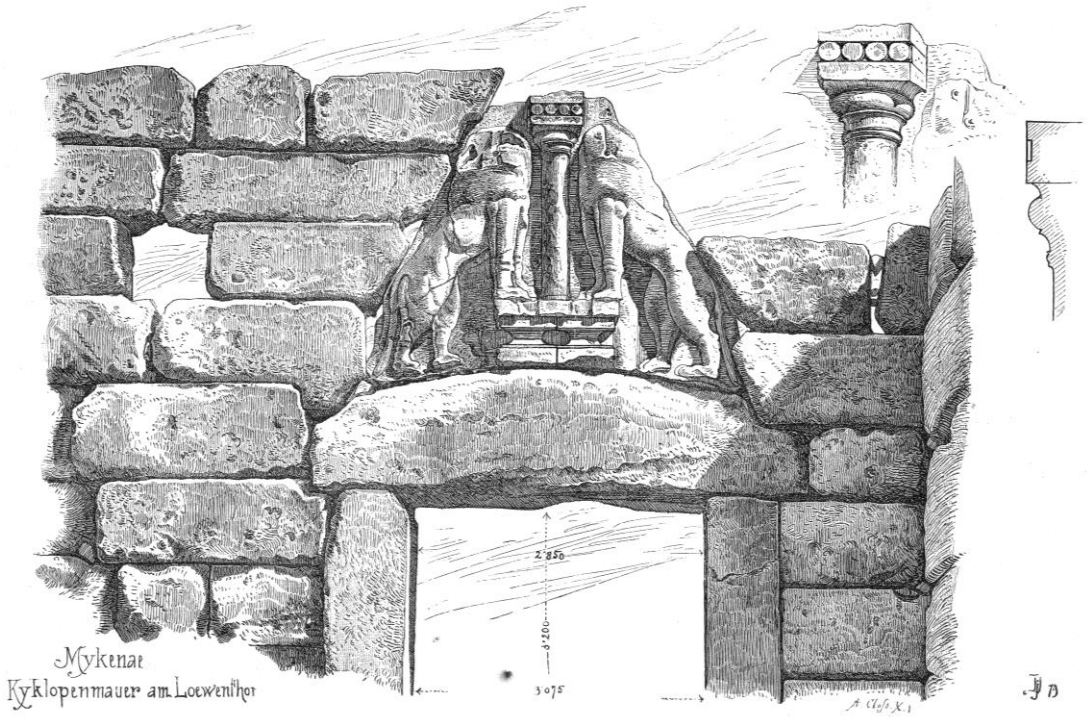


Fig. 1.13: Heraldic column with a torus capital capping the Lion gate at Mycenae

The most prominent Mycenaean representation of a column is in the heraldic scene over a gateway to the city of Mycenae.[82] A huge triangular block above the lintel displays the sculptures of two lions flanking a column at the centre (Fig. 1.13).[83] It is for this depiction of two felines that the gate received its name, 'Lion Gate'. The heraldic image of two creatures flanking a column is a regular motif within Mycenaean art and can also be found on seals, such as those shown at figure 1.10e. The column depicted, as well as the fore paws of the lions, is placed on a double pedestal. At its centre, the shaft rises from a collar-like element at the bottom, which more closely resembles an *apophyge* than a base. The shaft itself is straight and has no significant inclination towards the top; Durm

[82] This heraldic may have been adopted by Greek art from surviving Mycenaean remains as prominent as this. For comparable material see: Opitz and Moortgat (1955): Taf. 70-78/ 86.

[83] Durm, Josef (1881): The block shows pinholes as connectors for the heads of the two lions, it has to be assumed that these were crafted of a different material, some kind of metal.

states that it might have had an inverse taper but "it could only have been very little".[84] Located on top of the "coarse circular bulge" (which hardly resembles the largely protruding shapes of early Doric *echinoi*) appears an *abacus* shaped object.[85] The column terminates with four cylindrical forms beneath a secondary *abacus*-like element. Beyond this *abacus*-like element, no further information can be obtained as the block is broken. The column is shown as a single pillar, implying that it was a free-standing structure, although it has also been noted that an individual pillar could represent an entire building.[86] The latter interpretation is debatable as heraldic scenes depict columns as free-standing structures, as seen in the floral motif on the central column of Figure 1.10f. Whether or not the central column of a heraldic illustration refers to a building-integrated post, it could have been interpreted as a free-standing by Greek artist. In any case, the motif above the 'Lion Gate' indicates that the Mycenaeans used singular or free-standing columns.

Free-standing pillars were in fact common objects in Mycenaean art and plenty of free-standing posts were depicted on seals (Fig. 1.10c-e). Figure 1.10c shows a man between five pillars on the imprint of a cylindrical seal from Mycenae. The posts seen here are clearly intended to be seen as free-standing structures and commonly interpreted as such.[87] Each pillar represented is shown

[84] Durm, Josef (1893): "War die Säule ursprünglich nach unten verjüngt, so kann es nur äuserst wenig gewesen sein;", 25.

[85] Durm, Josef (1893): "Das Kapitell besteht aus dem quadratischen Abacus, unter dem ein plumper, rundlaufender Wulst sich befindet, [...]", 25. With a statement as this, Durm can be interpreted against Østby, who remarks that the theory of an ancestral heritage of the Doric capital to the Mycenaean torus "seems so generally accepted that it is not now considered necessary to argue for it" (2006, 19). This heritage was first suggested in the late nineteenth century, initially by Thiersch (1879), Middleton (1886, 163) and Puchstein, followed by Perrot and Chipiez and others. For a detailed discussion see: Wesenberg, Burkhardt (1971).

[86] Wesenberg, Burkhardt (1971): That this element can be seen as a surrogate for a building is also suggested by Wesenberg, he interprets the motives on top of the capital as pieces of a short entablature, 9.

[87] Wesenberg, Burkhardt (1971): Due to the double torus base of a singular pillar (fig. 1.10 far left) Wesenberg interprets one as an "upside down" pillar, 20. This interpretation seems disappropriate considering the scale of the seal and the limited space for the execution. In fact, deviations of columnar representations to architectural columns are common, the differences

with a torus-shaped base at the bottom (one pillar has two such bases), and another torus at the top (three of the pillars have two of these). The design of the vertical markers is different at the sacrificial scene displayed on a ring from Tiryns (figure 1.10d), in which four friendly spirits approach a seated deity, yielding offerings. The scene shows several free-standing objects, a 'sacred bough' between each creature and, as a climax of the procession, a low column raising a vessel in front of the deity. Each of these free-standing objects is also featured with an element at the bottom which can be interpreted as a base.

Considering the age, both the 'sacred boughs' and the shaft of the bowl bearing column are likely to have been crafted from timber and thus unlikely to survive over time, but the base, as the counterweight and thus needed to be heavy, is likely to be crafted from a durable material as stone. Because of its age, one would expect such a stand to have been demolished, although George Mylonas describes the existence of such a support discovered at Mycenae.[88] The base consists of three steps arranged in a pyramidal shape, with a socket on the upper surface for the placement of the shaft. Stepped bases were used for Minoan free-standing double-axe columns, as seen on the Hagia Triada sarcophagus and also in the Mycenaean period. Both columns flanking the entrance of the Treasury of Atreus, display a low base comprising three steps.[89] The proportions of the stone base found at Mycenae are closer to the representations of the bases of the free-standing columns depicted on the sarcophagus, suggesting this context for the column it upheld. The socket on the upper surface further substantiates this claim, as a socket is not needed for a building-integrated context. This interpretation finds additional support by the bases' small size – its bottom surface measures roughly 20 cm square and its height reaches about 30 cm. Nothing is known about the nature of the offering delivered by it, however double-axe capitals are not

cannot be seen as authentic reflections of the past (chapter III) and should be interpreted as artistic licence or by the artists capability.

[88] Mylonas, George (1966): 171.

[89] Wesenberg, Burkhardt (1973): Fig. 3. The presence of stepped bases within a free-standing context can also be confirmed for Greek sanctuaries. Similar objects have be found at the acropolis of Athens, which can be studied in the volumes of Raubitschek and Kissas. Kissas, Konstantinos (2000). Raubitschek, Anton E. (1949).

uncommon in Mycenaean culture; Mylonas prefers a more common dedication: a 'sacred bough' as represented in figure 1.10d.[90]

As a direct ancestor on the Peloponnese, the role of Mycenaean culture for the development of Greek architecture should not be underestimated. Mycenaean columns are evidenced in architectural remains and art objects. Illustrations on small objects have confirmed the existence of free-standing vertical markers. In addition to several representations depicting a base, a structural requirement for a firm stand, a small stone base allocated to this purpose consolidates their existence. The Mycenaean tradition of furnishing sacred spaces with free-standing columns perhaps inspired similar markers in the first Greek sanctuaries at the beginning of the 1st millennium BC. These markers were unlikely to have been as elaborate as Greek columns of the 6th century BC, and probably shared the simplicity of ancient Mycenaean columns, but the possibility of even occasional free-standing examples in early Greek sanctuaries would provide a significant medium of transmission and continuity.

Phoenicia – a link through trade

The wealth of the Phoenician civilisation was established on trade; Phoenician traders travelled throughout the Mediterranean. Their commercial empire reached from the Levant in the east to the Pillars of Heracles at Gibraltar.[91] On their journeys, the Phoenicians had contact with all neighbouring civilisations around the Mediterranean, and products of Phoenician provenance can be found in each of them, including Greece. Such products were often richly decorated and some displayed motifs evoking architectural designs. Additionally, the Phoenicians accumulated various elaborate designs from developed cultures which then, via their ships, reached distant lands such as Greece. The Phoenicians can therefore not only be seen as a source for direct influence, but also as

[90] Mylonas, George (1966): 171.

[91] The city of Cadiz contained a prominent sanctuary of Melkart until it was destroyed in the early 2nd millennium AD (Melkart was later named Heracles). For Phoenicians remains found within the Mediterranean see: Shaw (1989), Hoffmann (1997): 172-176 and Moscati (2000).

mediators of indirect contact between cultures, stimulated by the trade of prestigious artistic assets.[92]

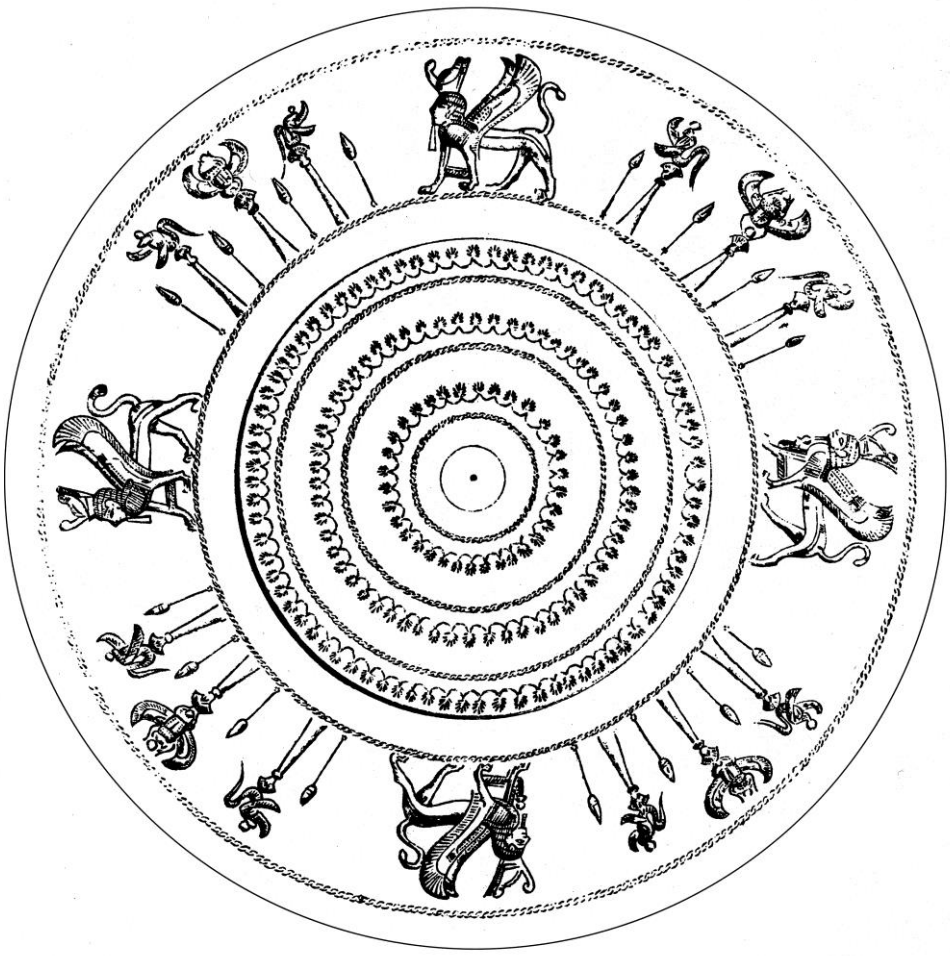


Fig. 1.14: Phoenician bowl found in Crete, displaying free-standing pillars and Egyptian motives.

Probably the most important culture of this period with strong ties to the Phoenician empire was Egypt, and Egyptian motifs are commonly used for their own products.[93] A *phiale* (libation bowl) found in Crete and produced by a

[92] The influence of the Phoenicians caused Walter Burkert to name his book *The Orientalizing Revolution* (1992). The influence of the Phoenicians has already been mentioned in the beginning of this chapter, for a more detailed discussion see: West (1971, 1997), Dietrich (1974): chapter 2, Beekes (2003) and Noegel (2007). On the Phoenician component of the Greek alphabet see Osborne (1996): 107-112 and on the Phoenicians as intermediaries see Dunbabin (1957): chapter 3, Moscati (1988), Aubet (1993), Markoe (1996).

[93] The Phoenician adapted their motives from several neighbouring countries and altered these according to their interpretation. Osborne, R. (1996): 40; Hasserodt, M (2009): 337.

Phoenician workshop, displays winged Sphinxes wearing the Egyptian crown, alternating with vertical markers (Fig. 1.14).[94] These pillars resemble free-standing columns, as their shafts are shown with a strong inclination and are capped by a floral capital. A scarab is placed on top of the post at the centre, flanked by two smaller beasts and with a circular element between its rear feet (probably a sun disk). The bowl is dated to the second half of the 8th century BC and was found in Zeus' cave on the island of Crete. As an element of decoration, the pillars depicted do not necessarily refer to the setting of a specific sanctuary, but the representation of free-standing objects on this bowl indicates their symbolic importance.

Fig. 1.15: Phoenician bowl displaying a procession scene flanked by free-standing columns.

[94] Markoe, Glenn (1985): 234, Cr2.

Free-standing posts were in fact frequently depicted on Phoenician bronze and silver bowls. Another bowl, dated around 850-750 BC, shows a procession towards a seated goddess (Fig. 1.15).[95] In front of the icon, a priestess performs some rite behind a tripod or altar, behind her is a table (or tripod) supporting jars. The background of the procession shows a pillar between each participant arriving. These columns are not traceable to any familiar design known to Greek architecture, as the capitals are crafted from three petals displaying a floral motif.[96] Most of these columns rise to touch the decorated rim of the plate, an analogy it might seem with columns and entablature a free-standing context seems more likely. Amongst the posts shown a smaller pillar of the same design appears incomplete, between the musicians behind the deity. This pillar would need to have an entablature in order to refer to a building-integrated context. Each of the pillars is shown with a visible taper and each is decorated (or held together) by horizontal lines, hinting at the use of a perishable material in its construction.

From the artefacts discussed so far, it is clear that a single column illustrated in the context of a sanctuary was not necessarily a surrogate for a building, but instead a free-standing donation. This can be seen once again in a bowl of Phoenician origin, dated to around 700 BC and found in Etruria (Italy). The bowl depicts a king or ruler going on a hunt. He leaves a fortified two-towered city in his chariot, and rests at a sanctuary on the opposite side of the bowl (Fig. 1.16).[97] The sanctuary is indicated by an altar, apparently set on fire, and a columnar object topped by a bowl or a pot. Above these two elements, the winged sun disk is depicted, enhancing the sacredness of the area.[98] The king is shown seated in front of the pillar, performing some kind of offering, possibly a libation. The post in front of him is clearly a free-standing column; above a small bulge, a vessel terminates the tapering shaft. The absence of a building for this

[95] Markoe, Glenn (1985): 246, Cy3.

[96] Two larger leaves turn out sideways and one smaller leaf rises in the middle. The smaller petal may also refer to a pistil but the floral origin of the motive can be seen as certain.

[97] Markoe, Glenn (2001): 496.

[98] The other disk-like object shown on the bowl is probably the moon. Paired celestial features are a motive which can be found eventually in representation. A similar representation of Minoan provenance is shown by a seal in figure 1.10 (g).

sanctuary is amplified by its position on the bowl – the site is shown opposite the city, located in the countryside, and the king's servant is seen awaiting his master's return at the empty chariot next to palm trees. Around 700 BC, temples were relatively rare features in Greece but sanctuaries, rural as well as urban, called for sacred furniture and therefore the sanctuary could be characterised in this way.[99]

Fig. 1.16: Phoenician bowl displaying a hunt with the hunter resting in a rural sanctuary.

The use of pillars in artwork of the premier seafaring civilisation of the Mediterranean in the early first millennium BC shows that the Phoenicians were also familiar with free-standing elements. Their artistic style would more than likely have been influenced by monuments and artefacts from different cultures. Phoenician vessels conveyed the 'barbarian' styles around the known world, stimulating artistic endeavour. Direct contact with Phoenician culture is thus more than likely to have had a significant impact in the development of Greek art

[99] Osborne, R. (1996): 90; Morris, I. (1999): 275; Coldstream, J. N. (1977): 317.

regarding architectural design. It was through their cargo vessels that the Greeks had contact with foreign ideas, and besides artefacts, tales about monuments from distant lands travelled abroad, encouraging Greek artists to produce great works.

***

Summary, Chapter I

The use of columns, posts and pillars as independent, free-standing structures has been witnessed in each of the cultures investigated. The artistic creations of each civilisation predate those of Greece, and thus the potential for contact, whether direct or indirect, is clear. According to heirlooms found in Greek sanctuaries and other Greek-occupied lands, these ancestral cultures would also have had a strong influence in the development of Greek society. Such conjecture applies to artefacts of lost cultures as well as to cultures alive at the time of contact.

Representation of the column as a free-standing structure varies between these cultures. For the Hittites, such columns were mainly represented in iconographical form, whilst for the Israelites they were mentioned exclusively in literature. The existence of free-standing columns within an architectural context is also attested in the Egyptian, Minoan and Mycenaean periods. In addition to their presence, several cultures associate divine characteristics with these free-standing structures, with at least two of these cultures associating them with stability. Materials used for the shafts are also diverse and are either durable (stone, several metals) or perishable (timber, reed). Archaeological discoveries from the Minoan and the Mycenaean periods indicate the existence of free-standing timber columns for Crete and the Peloponnesus during the 2nd millennium BC, providing direct antecedents for Greek culture.

Thus the construction of timber columns in the Greek period originated from diverse traditions of erecting pillars in a free-standing context. As they formed part of the sacred spaces in prior cultures, it is plausible that Greek society occasionally only revived this custom. Traces of this tradition were visible in artworks from the beginning of the establishment of what became Greek culture. For this reason, the investigation will turn to the earliest evidence available for the Greeks themselves, beginning with literary documents of the 8th century BC.

Chapter II: Votive columns in the literary sources of Greek antiquity

" a combination of columns with walls
contains its own antagonism."
Johann Wolfgang Goethe, 1786[1]

Architecture, as a visible artform, has always fascinated writers and led to literary descriptions of various kinds. Works of different periods include architectural settings in stories which can illustrate contemporary approaches to construction. At the same time, authors impose their opinions about architecture on the reader, as indicated by the opening quote by Johann Wolfgang Goethe. Architecture features in texts ranging from the mythological tales in the *Iliad* and *Odyssey* by Homer to the *Descriptions of Greece* by Pausanias. With regard to free-standing columns, the focus of this dissertation, as well as to columns in general, these texts provide invaluable documentation of monuments, real or imagined, especially because, the remains of columnar dedications dating to the Dark Ages are scarce. Interpreting literal evidence can be ambiguous; the objects described in texts are not bound to the structural requirements of nature and can therefore be interpreted in many ways.[2] Such descriptions do not provide firm information regarding the height, method of construction or the material being used, but they do at least demonstrate the general use of free-standing columns. Texts may also mention their environment and this can provide further information about structural context.

This chapter investigates a selection of ancient texts that are of particular relevance to the topic under discussion. They show that the use of free-standing columns is varied. It also becomes apparent that they were used as early as the 8th

[1] Johann Wolfgang Goethe, Italienische Reise. Vicenza, den 19 September: "... denn Säulen und Mauern zu verbinden bleibt doch immer ein Widerspruch."

[2] As mentioned in the introduction, the opinion about the importance of architectural remains of antiquity changed over time. In order to provide an un-interpreted view towards columnar appearances in Greek literature, this chapters' focus is on the original sources and not their interpretations by scholars. Most cases given solely refer to the Greek text and their translations an action that comprises the danger of the eventuality that texts may be biased.

century BC, as the descriptions of Hesiod and especially Homer indicate. The two authors delineated the pedigree of the Gods and gave them names marking the beginning of European theology.[3] The relevant works for each of the two writers – Hesiod's *Theogony* and *Works and Days* and Homer's *Iliad* and *Odyssey* – describe a world that is both mythological and ancient, and while Hesiod is more concerned with the genealogy of the Gods, Homer tells the tale of the invasion of Troy, and the return of one of the war's greatest heroes.

The work of Herodotus, a Greek writer of the 5th century BC, provides a different perspective; he gives a descriptive narrative of the environment of his time. His nine-book *The Histories* describes sanctuaries witnessed by the author during his travels through Greece and all over the Mediterranean. Herodotus' works are not concerned with monuments, but occasionally the author frames a scene by describing architectural features. The final author is Pausanias, a writer of the 2nd century AD. Pausanias, though not native to Greece but Asia Minor instead, wrote ten books in Greek under the title *Descriptions of Greece*. These ten volumes are intended to present the monuments and the history of Greece to an educated Roman audience, and in a way these books can be seen as an ancient travel guide. Both Herodotus and Pausanias describe architectural monuments which they consider to be of importance, either for the particular material they were constructed from, for the advanced technology involved in their construction, as necessity for the background of the story told, or to the age of the object that made it worth mentioning. The authors are arranged chronologically, starting with Hesiod and followed by Homer, even though the chronological order of these two is not certain.[4]

[3] The sequence of the authors is not that clear; some scholars believe Homer is the older than the latter. The two poets may not even lived at the same time since the famous competition between them is likely to be fictional, von Scheffer, Thassilo (1984): 9 and 50. Herodotus, *Histories*: II 53-2.

[4] This chronological order follows West. M. L. (1966) and West M.L. (1978). For the opposite opinion see Schmidt, E. G. (1965): 12.

Hesiod – superior in performance

As an outstanding performer in the field of poetry, Hesiod was already famous in antiquity as he was awarded a tripod in a poetry competition in Boeotia.[5] Hesiod rarely describes sanctuaries and their content in his two major works *Theogony* and *Works and Days*, but he occasionally makes mention of a building or a post. In fact, several buildings are mentioned in *Works and Days* but none of them are within a sacred context, and the material of construction is given for only one of them.[6] According to Hesiod, this passage refers to the houses of the third human race:[7]

ὧν δ᾽ ἦν χάλκεα μὲν τεύχεα, χάλκεοι δέ τε οἶκοι χαλκῷ δ᾽ εἰργάζοντο: μέλας δ᾽ οὐκ ἔσκε σίδηρος.	Their armor was of bronze, and their houses of bronze, and of bronze were their implements: there was no black iron.[8]

The description of these houses is difficult to interpret as the dwellings obviously never existed in reality, and is part of his mythological scheme. Nevertheless, Hesiod was able to imagine buildings being made out of this material. If buildings of bronze actually existed in his own time, they must have been small given that bronze is an unusual material for construction.[9] Hesiod saw buildings decorated by metal revetments, as this was used for Greek constructions of the 7th and 6th

[5] Pausanias, *Descriptions of Greece*: IX 31,3. As a true Greek, Hesiod grew up in that part of Greece. Schmidt, E. G. (1965): 14.

[6] It has to be noted that it is not Hesiod's concern to highlight special constructions in general, as *Works and Days* was written to solve an argument between him and his brother Perses, which becomes evident later in the text as Hesiod advises Perses how to construct a building. Hesiod's advice, that a house is at its best when finished by plasterwork to protect it from birds, can be seen as an indicator for constructions of perishable materials as wattle and daub [745]. Hesiod also indicates the best time of the year to cut the timber for construction [805]. Both passages describe wooden frame constructions, but refer to secular buildings and certainly not to buildings within the enclosure of a sanctuary. This is more than likely a reflection of the common method of construction during this period.

[7] The English translation is taken from the *Perseus online catalogue*. For a commented version of *Works and Days* see: Schönberger, O. (1996) and Schmidt, E. G. (1965). For a commented version of *Theogony*: see Schönberger, O. (1999), Schmidt, E. G. (1965) and West M.L. (1988).

[8] Hesiod, *Works and Days*: 150, Perseus online catalogue, English (1914)..

[9] Hesiod is not the sole author referring to houses made of bronze as Pausanias confirms the existence of this material. Bronze, as a building material, seems unusual except for its use as decoration.

century BC.[10] Buildings plated with bronze components have already been mentioned still existing in his period as in the architecture of 'barbarian' cultures, such as the temple of Salomon at Jerusalem.[11] It remains debatable whether Hesiod's writings were influenced by witnessing such buildings in the near east, or just by hearing stories about them.

The second major work accredited to Hesiod is the *Theogony*, a text in which two temples are described as the 'house' (ναος) of a God.[12] The text documents the existence of columns, though the structural context is not clear. In one passage a column is given in a mythological context; the Titan Prometheus is bound to a column after making a fool out of Zeus:

δῆσε δ᾽ ἀλυκτοπέδῃσι Προμηθέα ποικιλόβουλον δεσμοῖς ἀργαλέοισι μέσον διὰ κίον᾽ ἐλάσσας:	And ready-witted Prometheus he bound with inextricable bonds, cruel chains, and drove a shaft through his middle,[13]

The word Hesiod uses for column (or 'shaft', as in the translation) is 'κίον', a term that can be used for both structural contexts investigated. The environment itself however provides a further clue that this column is not part of a building. As this shaft is driven through the knot, Prometheus is more likely to have been chained to a free-standing post (Fig. 3.13). Yet the scene is of mythological character and so should not be over interpreted.

Hesiod's second passage mentioning columns uses the same Greek term, and again in the realm of mythology. The passage describes the columns of the house of Styx, and in this instance their material is given:

[10] Furtwängler, Adolf (1890): 149, Abb. 939, Tafel LIII. Herrmann, Klaus (1996): 124, Abb. 1.

[11] As mentioned in chapter 1, bronze was the material used for the twin columns, it was also used on the inside of the temple, which was decorated by this precious metal. This sanctuary still existed during Hesiod's lifetime; its first destruction is described in detail in the *Bible*.

[12] Williams, Dyfri (1982): The term ναος is a general term for house that could be used for a non-secular construction as well as for a temple. Dyfri argues that even a temple as monumental as the *Dipteros* of Artemis at Ephesos has been addressed with this term, 60.

[13] Hesiod, *Theogony*: 521-522, Perseus online catalogue, English (1914).

νόσφιν δὲ θεῶν κλυτὰ δώματα ναίει	She lives apart from the gods in her glorious house
μακρῇσιν πέτρῃσι κατηρεφέ᾽: ἀμφὶ δὲ πάντη	vaulted over with great rocks and propped up to
κίοσιν ἀργυρέοισι πρὸς οὐρανὸν ἐστήρικται.	heaven all round with silver pillars.[14]

This passage refers to a group of columns, but their context is not clearly identifiable. It could be the case that they surround the building in the manner of a *peristasis*, a scheme that cannot be confirmed archaeologically for Greek temples of the 8th century BC, or that they accompany the house by standing freely near its front and sides.[15] Also the word "heaven" is not necessarily referring to the sky and therefore implying several singular columns – this word could also refer to the painted decoration on the ceiling of the *peristasis*, locating both elements to parts of the same building.[16] Despite the difficulties in interpreting the columns' structural context, their importance becomes obvious by a comparison of the materials given – the columns are made of silver (αργυρέοισι), but the house is made of stone (πέτρησι). The more precious material of the two is associated with the columns, a testimony to their special status.

While precious metal was an unlikely material for construction, the building itself appears to have been made from stone – apparently a rare material for houses of this period. As Hesiod continues, he mentions a house (ναος) of Aphrodite without explaining the construction, but notes that the building required a guard:

[14] Hesiod, *Theogony*: 777-779, Perseus online catalogue, English (1914).

[15] The existence of a *peristasis* cannot be confirmed archaeologically for the 8th century BC since no Greek building of this period is known displaying foundations for surrounding columns. The first foundations for columns, appearing in this context, are documented surrounding the temples of Ephesos and Rakita both dated to 700 BC (fig. 0.7). Bammer, Anton (1990): 147, Fig. 14, Mazarakis-Ainian (1987). For the discussion on the *peristasis* of the Samian *Hekatompedos* see chapter 4 and Kienast, Herrmann (1996).

[16] The sky or stars in fact are commonly painted underneath the ceiling of temples, an element of decoration custom to Greek and Egyptian architecture.

αὐτὰρ ὑπαὶ Κεφάλῳ φιτύσατο φαίδιμον υἱόν,
ἴφθιμον Φαέθοντα, θεοῖς ἐπιείκελον ἄνδρα.
τόν ῥα νέον τέρεν ἄνθος ἔχοντ᾽ ἐρικυδέος ἥβης
παῖδ᾽ ἀταλὰ φρονέοντα φιλομμειδὴς Ἀφροδίτη
ὥρτ᾽ ἀναρεψαμένη, καί μιν ζαθέοις ἐνὶ νηοῖς
νηοπόλον νύχιον ποιήσατο, δαίμονα δῖον.

And to Cephalus she bore a splendid son, strong Phaethon, a man like the gods, whom, when he was a young boy in the tender flower of glorious youth with childish thoughts, laughter-loving Aphrodite seized and caught up and made a keeper of her shrine by night, a divine spirit.[17]

The text suggests that the building is not as solid as the stone constructions later Greek architecture is known for. The need for a night-watchman indicates that the sanctuary contained several precious objects in danger of theft.

Hesiod's descriptions show that the Greeks built temples in the 8th century BC.[18] The specific reference to the use of 'column', either as building integrated or free-standing, is significant for this period; especially since wooden columns, pillars and supports elude archaeology. The number of references Hesiod makes to columns is too few to discern the dominant structural context (e.g. building-integrated or free-standing). Nor can analysing the Greek term he uses help since 'κίον' seems to work for both contexts.

Homer - a question of authorship

In contrast to the works accredited to Hesiod, the authorship of the *Iliad* and the *Odyssey* is not certain. Both are generally believed to have been composed by Homer, but this is in question.[19] Written in the same century (the *Iliad* around the middle of the 8th century BC, the *Odyssey* near the end), both epics present related topics.[20] These two monumental literary works describe the Greek invasion of Troy and the return of their Heroes, events that supposedly happened centuries before Greek society was formed.[21] The extent to which the mention of

[17] Hesiod, *Theogony*: 986 – 990; Perseus online catalogue, English (1914).
[18] A large collection of Geometric building foundations can be found in: Drerup, H. (1969).
[19] It is not even certain that both works were created by the same person. See Ulf (2009) for a review of this debate. Hampe, R. (2007): 533. Lesky, Albin (1968).
[20] West favours the creation of the *Iliad* by Homer ca. 680-640, and that of the *Odyssey* by another, slightly younger, poet. West, M. L. (2011).
[21] After all, if this fabulous war ever happened, it is very unlikely to have happened in the way that Homer describes. Hertel, Dieter (2003).

material culture in Homeric epic is an echo of the Bronze Age or rather a reflection of the time they were committed to writing, either side of 700, has been the subject of much debate.[22] Although detailed descriptions of free-standing columns, post and pillars are rare, a lot can be learned about them from the activities they were connected to. As pointed out by Elisabeth McGowan, a vertical marker was a crucial element in races, being used as a turning post, as we shall see.[23] But these markers were also found in other roles – as part of the sacred furniture of a sanctuary, as a landmark, as a funerary marker of a tomb, or even as an offering in general (outside of the *temenos* of a sanctuary). The text occasionally mentions materials and three columns are described as being made of timber.

Only one vertical marker made of timber is mentioned in the *Iliad*, and this was apparently erected before the Greeks arrived at the shores of Troy. Achilles used this marker as turning point for the funerary race in honour of Patroclos:[24]

σῆμα δέ τοι ἐρέω μάλ᾽ ἀριφραδές, οὐδέ σε λήσει.
ἕστηκε ξύλον αὖον ὅσον τ᾽ ὄργυι᾽ ὑπὲρ αἴης
ἢ δρυὸς ἢ πεύκης: τὸ μὲν οὐ καταπύθεται ὄμβρῳ,
λᾶε δὲ τοῦ ἑκάτερθεν ἐρηρέδαται δύο λευκὼ
ἐν ξυνοχῇσιν ὁδοῦ, λεῖος δ᾽ ἱππόδρομος ἀμφὶς
ἤ τευ σῆμα βροτοῖο πάλαι κατατεθνηῶτος,
ἢ τό γε νύσσα τέτυκτο ἐπὶ προτέρων ἀνθρώπων,
καὶ νῦν τέρματ᾽ ἔθηκε ποδάρκης δῖος Ἀχιλλεύς.

Now will I tell thee a manifest sign that will not escape thee. There standeth, as it were a fathom's height above the ground, a dry stump, whether of oak or of pine, which rotteth not in the rain, and two white stones on either side thereof are firmly set against it at the joinings of the course, and about it is smooth ground for driving. Haply it is a monument of some man long ago dead, or haply was made the turning-post of a race in days of men of old; and now hath swift-footed goodly Achilles appointed it his turningpost.[25]

Homer cites this post in a funerary context in the first instance, and then reused as a turning marker for the ensuing competition.[26] Despite this passage providing documentation of the existence of free-standing columns constructed with a wooden shaft during the 8th century BC, interpreting the nature of the column is

[22] See Plommer (1977) contra the thesis of Drerup (1969) and others, that the architecture of Homer's own day was the basis for his descriptions. See also Lorimer (1950) and Luce (1975): 49-53.
[23] McGowan, Elizabeth (1995).
[24] The English translation is taken from the *Perseus online catalogue*. For a commented version on the *Iliad* see: Hampe, R. (2007). For a commented version of the *Odyssey* see: Hampe (2009).
[25] Homer, *Iliad:* 23.326-333; Perseus online catalogue, English (1924).
[26] McGowan, Elizabeth (1995): 629.

more difficult. The word used is σήμα (marker), a general term for a marker or indicator, but the text also describes "two white stones planted on either side". Whether these represent a base and capital is not certain but at least one of the two has to be interpreted as being placed at the bottom of the shaft as Idomeneos fears for his friends drawing their chariots too close to it.[27] The post is not placed on top of a mound, as this would invalidate his fear, but on "smooth ground" instead, and referring to a stone at its bottom, this could be interpreted as a base. The method of construction cannot be obtained from this passage, though it indicates the existence of a stone base in one way or the other. Nevertheless, this position demonstrates that wooden shafts were in use during this period in a free-standing context, despite being vulnerable to decay by the weather.

A base as a counterweight is one possibility for a wooden shaft to remain vertical, but it might also have been driven firmly into the ground by force – a method which would not require the presence of a base. In the *Odyssey*, Odysseus is explicitly commanded by the seer Teiresias to do so, in order to erect a wooden marker to calm the anger of Poseidon:

σῆμα δέ τοι ἐρέω μάλ᾽ ἀριφραδές, οὐδέ σε λήσει:	And I will tell thee a sign right manifest, which will not
ὁππότε κεν δή τοι συμβλήμενος ἄλλος ὁδίτης	escape thee. When another wayfarer, on meeting thee,
φήῃ ἀθηρηλοιγὸν ἔχειν ἀνὰ φαιδίμῳ ὤμῳ,	shall say that thou hast a winnowing-fan on thy stout
καὶ τότε δὴ γαίῃ πήξας ἐυῆρες ἐρετμόν,	shoulder, then do thou fix in the earth thy shapely oar
ῥέξας ἱερὰ καλὰ Ποσειδάωνι ἄνακτι,	and make goodly offerings to lord Poseidon,[28]

Another oar is referred to as an offering in the *Odyssey* – Elpenor, a companion of Odysseus who died during the journey homewards, received this honour from the surviving crew. They erected two objects on top of his mound; the first, a stele (στήλη), and the second, the oar he used to row with (ερετμόν):

[27] Homer, *Iliad*: 23.460-466. This moment is highly dangerous and marks a key moment of the race, this finds confirmation in the emotional outburst of Idomeneus, who cares for his friends. As a spectacular moment of a race, this is also depicted by painters of antiquity (fig. 3.17).

[28] Homer, *Odyssey*: 11.126 - 11.130; Perseus online catalogue, English (1919).

αὐτὰρ ἐπεὶ νεκρός τ᾽ ἐκάη καὶ τεύχεα νεκροῦ,
τύμβον χεύαντες καὶ ἐπὶ στήλην ἐρύσαντες
πήξαμεν ἀκροτάτῳ τύμβῳ ἐυῆρες ἐρετμόν.

But when the dead man was burned, and the armour of the dead, we heaped up a mound and dragged on to it a pillar, and on the top of the mound we planted his shapely oar.[29]

Although the material for the first - the stele - is not given, a block of stone seems likely. In contrast to this simple funeral marker stands the oar, obviously made of timber. Both oars described in the text are forced firmly into the ground in the same manner, the only difference being their purpose. Whilst the latter is used as sign of remembrance for the dead (similar to the wooden post of the *Iliad*), the first is an offering to a god.

The text mentions several columns in a funerary context, but usually their material of construction is not explicit. These posts are mainly used to frame the setting rather than being of importance on their own, but the fact that they are mentioned suggests the existence of free-standing columns for Homer's period. A firmly fitted marker is used by Paris, who seeks additional support for a shot:

αὐτὰρ Ἀλέξανδρος Ἑλένης πόσις ἠϋκόμοιο
Τυδεΐδῃ ἔπι τόξα τιταίνετο ποιμένι λαῶν,
στήλῃ κεκλιμένος ἀνδροκμήτῳ ἐπὶ τύμβῳ
Ἴλου Δαρδανίδαο, παλαιοῦ δημογέροντος.

But Alexander, lord of fair-haired Helen, aimed an arrow at Tydeus' son, shepherd of the host, leaning the while against a pillar on the barrow that men's hands reared for Ilus, son of Dardanus, an elder of the people in days of old.[30]

The text refers to a long-running custom of creating a marker of some kind on top of a mound (Ilos was the founder of Troy, referring to the 2nd millennium BC). Considering that the old age of the column timber seems a likely material. Another such marker is promised for the burial of Sarpedon, a son of Zeus, indicating the popularity of this type:

αὐτὰρ ἐπὴν δὴ τόν γε λίπῃ ψυχή τε καὶ αἰών,
πέμπειν μιν θάνατόν τε φέρειν καὶ νήδυμον ὕπνον
εἰς ὅ κε δὴ Λυκίης εὐρείης δῆμον ἵκωνται,
ἔνθά έ ταρχύσουσι κασίγνητοί τε ἔται τε

but when his soul and life have left him, then send thou Death and sweet Sleep to bear him away until they come to the land of wide Lycia; and there shall his brethren and his kinsfolk give him burial with

[29] Homer, *Odyssey*: 12.13 - 12.15; Perseus online catalogue, English (1919).
[30] Homer, *Iliad*: 11.369 – 11.372; Perseus online catalogue, English (1924).

τύμβῳ τε στήλῃ τε: τὸ γὰρ γέρας ἐστὶ θανόντων. mound and pillar; for this is the due of the dead.[31]

It becomes apparent that burial markers were a common feature and were not solely created for kings. As of divine blood, Ilos and Sarpedon were without doubt of nobility but the situation regarding Elpenor is different, the companion of Odysseus was not known for his valour and nor noble birth.[32] Free-standing posts may thus be more common in ancient Greece than previously assumed.[33] These pillars would have been relatively firm fitted, at least firm enough for Paris to use such as solid support for a clear shot on target.

Homer mentions posts not only in a free-standing context, but also integrated into buildings, and while a number of the columns described may have formed parts of a structure, it is not always clear whether these refer to a man-constructed object. Probably the best example of this ambiguity is the construction of Odysseus bed, which included an olive tree that was 'like a pillar':

θάμνος ἔφυ τανύφυλλος ἐλαίης ἔρκεος ἐντός, A bush of long-leafed olive was growing within the
ἀκμηνὸς θαλέθων: πάχετος δ᾽ ἦν ἠΰτε κίων. court, strong and vigorous, and girth it was like a pillar.[34]

The reason that Homer refers to the construction of the bed is important for the story as it could simply be a metaphor for stability. According to the epic, the bedstead started as a tree which became surrounded by the building, and with the roots still deep in the ground it kept an incredible rigidity. Trees and free-standing pillars share the association of immense stability as the firm fitting of free-standing columns is described to be legendary. The *Iliad* refers twice to the immovability of free-standing posts in a metaphorical manner. Firstly, a column is used to compare the immovability of the horses of Achilles, after the death of Patroclos:

[31] Homer, *Iliad*: 16.453-457 and repeated *Iliad*: 16.671-675; Perseus online catalogue, English (1924).
[32] Homer, *Odyssey*: 10.551 - 10.552.
[33] As mentioned in the introduction, the focus of previous research was on the building (temple) and the use of columns within its structure and the existence of wooden columns was denied for various reasons.
[34] Homer, *Odyssey:* 23.190 – 23.191; Perseus online catalogue, English (1919).

ἀλλ᾽ ὥς τε στήλη μένει ἔμπεδον, ἥ τ᾽ ἐπὶ τύμβῳ
ἀνέρος ἐστήκῃ τεθνηότος ἠὲ γυναικός,
ὣς μένον ἀσφαλέως περικαλλέα δίφρον ἔχοντες
οὔδει ἐνισκίμψαντε καρήατα: …

Nay, as a pillar abideth firm that standeth on the tomb of a dead man or woman, even so abode they immovably with the beauteous car, bowing their heads down to the earth.[35]

Secondly, another column is used to represent the steadiness and heroic virtue of Alkáthoos as he is slain by Idomeneus:

ἀλλ᾽ ὥς τε στήλην ἢ δένδρεον ὑψιπέτηλον
ἀτρέμας ἑσταότα στῆθος μέσον οὔτασε δουρὶ
ἥρως Ἰδομενεύς, …

but as he stood fixed, even as a pillar or a tree, high and leafy, the warrior Idomeneus smote him with a thrust of his spear full upon the breast,[36]

In each instance, free-standing columns are given a positive connotation – the mourning horses are as admirable as the valour of Alkáthoos, who does not flee cowardly and remains steadfast. Both passages refer to a column in a metaphorical context, and while the material of such a post cannot be defined, such a use of the term highlights the stability of the construction of free-standing pillars. The fact that the second passage compares free-standing pillars with trees does not necessarily imply the use of timber for the pillar. This comparison indicates that trees were also of importance for Greek culture as indeed they were.

The *Odyssey* also mentions supports that could be interpreted as being integrated into buildings. The Greek term used in all the following passages is κίον, but as previously discussed in reference to Hesiod, this term does not necessarily refer to a building integrated column. As it accounts for the posts in the *Odyssey*, it is questionable whether the column mentioned is part of the building or is free-standing, as in the case of the ‘tall pillar’ at the property of Odysseus at Ithaca:

αὐτὰρ ἐπεί ῥ᾽ ἵκανε δόμους εὖ ναιετάοντας,
ἔγχος μέν ῥ᾽ ἔστησε φέρων πρὸς κίονα μακρήν,
αὐτὸς δ᾽ εἴσω ἴεν καὶ ὑπέρβη λάϊνον οὐδόν.

But when he came to the stately house he set his spear in place, leaning it against a tall pillar, and himself went in and crossed the threshold of stone.[37]

[35] Homer, *Iliad*: 17.434 – 17.437; Perseus online catalogue, English (1924).
[36] Homer, *Iliad*: 13.437 – 13.439; Perseus online catalogue, English (1924).
[37] Homer, *Odyssey:* 17.28 – 17.30; Perseus online catalogue, English (1919).

This significant post seems to be outside the building as Telemachos leans his spear against it before he passes the threshold. In a later part of the text, another 'great pillar' is described similarly and also appears to be outside. It is possible that both passages refer to the same column:

ὣς ἄρ᾽ ἔφη, καὶ πεῖσμα νεὸς κυανοπρῴροιο	So he spoke, and tied the cable of a dark-prowed ship to
κίονος ἐξάψας μεγάλης περίβαλλε θόλοιο,	a great pillar and flung it round the dome, stretching it
ὑψόσ᾽ ἐπεντανύσας, μή τις ποσὶν οὖδας ἵκοιτο.	on high that none might reach the ground with her feet.[38]

Despite being outdoors, the post is not necessarily free-standing and could possibly have been a support for a porch, sheltering the entrance. If this were the case however, it would raise the question of whether the support of a porch could be addressed as a 'great pillar'. Alternatively, it could be interpreted that the column stood as a free-standing element of the courtyard. The text describes that the courtyard contains an altar to Zeus, which could conceivably be accompanied by a 'great' free-standing column.[39] This post would have had to be extremely firm-fitted in order to be able to hold the cable of the ship as described in the story, a situation which favours a building-integrated context. This question cannot be answered satisfactorily since the work is fictional – Homer uses this passage to express the rage of Odysseus after his return, and might overestimate the structural capability of the column. In fiction, the structural viability of a column cannot be questioned, therefore both options are equally possible.

Depictions of other columns in the *Odyssey* are less ambiguous about their context. Homer describes two houses in detail, the house of Odysseus at Ithaca and the house of Alkinoos, the leader of the Phaiakians. Two columns are given for Odysseus' house, one in the main hall with a spear rack leaning against it:

οἱ δ᾽ ὅτε δή ῥ᾽ ἔντοσθεν ἔσαν δόμου ὑψηλοῖο,	And when they were within the lofty house, he bore
ἔγχος μέν ῥ᾽ ἔστησε φέρων πρὸς κίονα μακρὴν	the spear and set it against a tall pillar in a polished
δουροδόκης ἔντοσθεν ἐυξόου, ἔνθα περ ἄλλα	spear-rack, where were set many spears besides,
ἔγχε᾽ Ὀδυσσῆος ταλασίφρονος ἵστατο πολλά	even those of Odysseus of the steadfast heart.[40]

[38] Homer, *Odyssey:* 22.465 – 22.467; Perseus online catalogue, English (1919).
[39] Homer, *Odyssey:* 22.334 and *Odyssey* 22.379.
[40] Homer, *Odyssey:* 1.126 – 1.129 and differently repeated in 23.90; Perseus online catalogue, English (1919). Both post documented by this passage are described to the same environment,

And another, which is probably the central support of a storage facility:

"ἦ τοι ἐγὼ καὶ Τηλέμαχος μνηστῆρας ἀγαυοὺς
σχήσομεν ἔντοσθεν μεγάρων, μάλα περ μεμαῶτας.
σφῶϊ δ᾽ ἀποστρέψαντε πόδας καὶ χεῖρας ὕπερθεν
ἐς θάλαμον βαλέειν, σανίδας δ᾽ ἐκδῆσαι ὄπισθε,
σειρὴν δὲ πλεκτὴν ἐξ αὐτοῦ πειρήναντε
κίον᾽ ἀν᾽ ὑψηλὴν ἐρύσαι πελάσαι τε δοκοῖσιν,
ὥς κεν δηθὰ ζωὸς ἐὼν χαλέπ᾽ ἄλγεα πάσχῃ:"

"Verily I and Telemachus will keep the lordly wooers within the hall, how fierce soever they be, but do you two bend behind him his feet and his arms above, and cast him into the store-room, and tie boards behind his back; then make fast to his body a twisted rope, and hoist him up the tall pillar, till you bring him near the roof-beams, that he may keep alive long, and suffer grievous torment."[41]

The latter is undoubtedly part of the structure, confirmed by the description of the roof construction. The context of the first post mentioned is slightly more uncertain, as the post is also addressed as a 'tall pillar' and is used as support for a spear rack (although unlike the column which Telemachos leant his spear against, this post is definitely indoors). It is possible that Homer is describing a different post inside the building but, as a fictional story, the passage should not be over interpreted. Disregarding the ambiguity in the location of this post, both passages could very well be referring to the same post.

Three passages in the text refer to pillars belonging to the house of Alkinoos. All these passages might be referring to the same pillar, or to different pillars from the same room within an elongated hall. As Odysseus arrives at Alkinoos' island, his daughter explains how to find her mother inside the house:

… ἀλλ᾽ ὁπότ᾽ ἄν σε δόμοι κεκύθωσι καὶ αὐλή,
ὦκα μάλα μεγάροιο διελθέμεν, ὄφρ᾽ ἂν ἵκηαι
μητέρ᾽ ἐμήν: ἡ δ᾽ ἧσται ἐπ᾽ ἐσχάρῃ ἐν πυρὸς αὐγῇ,
ἠλάκατα στρωφῶσ᾽ ἁλιπόρφυρα, θαῦμα ἰδέσθαι,
κίονι κεκλιμένη: δμωαὶ δέ οἱ εἵατ᾽ ὄπισθεν.

But when the house and the court enclose thee, pass quickly through the great hall, till thou comest to my mother, who sits at the hearth in the light of the fire, spinning the purple yarn, a wonder to behold, leaning against a pillar, and her handmaids sit behind her.[42]

A similar support is offered later in the text to blind singer Demódokos:

---

from this follows that the passage either refers to the same pillar or to a pillar of similar characteristics - such applies to a row of columns within the same building.

[41] Homer, *Odyssey:* 22.171 – 22.177; Perseus online catalogue, English (1919).

[42] Homer, *Odyssey:* 6.303 - 6.307; Perseus online catalogue, English (1919).

κῆρυξ δ᾽ ἐγγύθεν ἦλθεν ἄγων ἐρίηρον ἀοιδόν,
Δημόδοκον λαοῖσι τετιμένον: εἶσε δ᾽ ἄρ᾽ αὐτὸν
μέσσῳ δαιτυμόνων, πρὸς κίονα μακρὸν ἐρείσας.

Then the herald came near, leading the good minstrel, Demodocus, held in honor by the people, and seated him in the midst of the banqueters, leaning his chair against a high pillar.[43]

These columns mentioned by this passage clearly defined as part of the structure and therefore likely to be crafted out of timber despite Homer not mentioning a material for their construction. The description of a (wooden?) peg in the third passage is not necessarily an indicator for wood, several peg-holes can be seen at the stone columns of the *peristasis* at the Archaic temple of Hera at Olympia:[44]

τῷ δ᾽ ἄρα Ποντόνοος θῆκε θρόνον ἀργυρόηλον
μέσσῳ δαιτυμόνων, πρὸς κίονα μακρὸν ἐρείσας:
κὰδ δ᾽ ἐκ πασσαλόφι κρέμασεν φόρμιγγα λίγειαν
αὐτοῦ ὑπὲρ κεφαλῆς καὶ ἐπέφραδε χερσὶν ἑλέσθαι
κῆρυξ: …

For him Pontonous, the herald, set a silver-studded chair in the midst of the banqueters, leaning it against a tall pillar, and he hung the clear-toned lyre from a peg close above his head, and showed him how to reach it with his hands.[45]

It is not fundamentally clear whether these passages refer to a single pillar or to a series of posts forming a central spine, but the use of timber as a material for their construction seems likely for a building of that age.

According to the two most prominent epics of the 8th century BC, columns were not uncommon, but yet evidently not so common as to be everyday. The way they are referred to often seems to convey a special status. Columns are cited for both structural contexts investigated, either incorporated in the structural system of a building or as a free-standing monument. The materials documented for their shafts vary from timber to stone, and even to precious materials such as silver. Since silver is a rather unusual material for construction, it was either only used for an exceptional few columns and therefore more likely for a free-standing context, or was of a purely mythological character. In spite of the obvious rarity of

[43] Homer, *Odyssey:* 8.471 – 8.473; Perseus online catalogue, English (1919).

[44] Apart from peg-holes, the columns also display rectangular sockets. The purpose of these recesses is uncertain but a tradition of putting offerings into trees can be noticed for Greek antiquity, as visualised in paint (fig. 3.1, chapter 3). For discussion see: Donderer, Michael (2005): 12-13, Brulotte, Eric (1994).

[45] Homer, *Odyssey:* 8.65 – 8.69; Perseus online catalogue, English (1919).

silver columns, the fact that there are instances mentioned in literature enhances the prominent status of this architectural element.

An important issue encountered when verifying the existence of free-standing columns is the manner in which they are fitted into the ground, as frequently stated by the authors. The firmness of free-standing columns is legendary in the tales of Homer, regardless of the material used. Homer also offers at least one possibility for the fitting technique of the post – by driving it by force firmly into the ground. The other possible method involved 'two stones on either side' of a wooden shaft of which at least one has to be at the bottom, but interpreting the columns structural context solely based on this passage is difficult.

Herodotus - the first historian

Herodotus wrote *The Histories* during the 5th century BC, a period when several major monuments in Greece were completed and Greek art was at its height. By this time temples were a common feature of sanctuaries, and almost every sanctuary was furnished with one. Since the monumental *dipteroi* (Samos, Didyma and Ephesus) were finished or still under construction *The Histories* should be seen as a retrospective view of the development of Greek architecture, an investigation of the constructions of the 7th and 6th century BC. A situation that fits Herodotus' intention to write *The Histories*, which was to record the history of Greece and, as stated in his prologue, "things done by man that shall not to be forgotten in time, and that great deeds [...] not lose their glory".[46] In fact, *The Histories* are considered to be the first books on historical events, a milestone recognised in the Roman period by Cicero, who honours Herodotus as "pater historiae", the "father of history".[47]

The text mentions several columnar monuments, mostly as background descriptions of the storyline, and while most of the information can be considered

[46] Herodotus, *The Histories*: preface I 0.
[47] Cicero, *De Legibus*: 1,5,5. Pohlenz, M. (1961).

authentic, there does exist a problem. As a well-travelled scholar, Herodotus' expertise reached as far as the cultural assets of Egypt or even India, and according to his information it becomes clear that parts of his text have to be considered as fiction.[48] Since the construction of temples, even something as monumental as the temple of Artemis at Ephesus - a gigantic temple of roughly 112 m times 57 m in size, was a common feature for Greek sanctuaries; it becomes evident that Herodotus' concern is not the size or style of elements within sacred enclosures.[49] Nevertheless, columns are occasionally of some importance and so find their way into his descriptions. This importance originates either from the significance of the donor or the importance of the honoured, or from the preciousness of the material used. In general, these posts can be arranged into two groups – the first comprises columns used as part of a building, while the second deals with posts mentioned in a free-standing context, used either as votive dedication, as memorials or as a landmark.

Columns as part of a Building

Herodotus's concern is not to produce detailed descriptions of buildings as is evident for the temple of Artemis at Ephesus. It is more important to him to document that Croesus dedicated several columns than to acknowledge the beauty of the monument or even its impressive size:[50]

Κροίσῳ δὲ ἐστὶ ἄλλα ἀναθήματα ἐν τῇ Ἑλλάδι πολλὰ καὶοὐ τὰ εἰρημένα μοῦνα. ἐν μὲν γὰρ Θήβῃσι τῇσι Βοιωτῶντρίπους χρύσεος, τὸν ἀνέθηκέ τῷ Ἀπόλλωνι τῷ Ἰσμηνίῳ,ἐν δὲ Ἐφέσῳ αἵ τε βόες αἱ χρύσεαι καὶ τῶν κιόνων αἱπολλαί, ἐν δὲ Προνηίης τῆς ἐν Δελφοῖσι ἀσπὶς χρυσέημεγάλη. ταῦτα μὲν καὶ ἔτι ἐς ἐμὲ ἦν περιεόντα, τὰ δ᾽ἐξ	There are many offerings of Croesus' in Hellas, and not only those of which I have spoken. There is a golden tripod at Thebes in Boeotia, which he dedicated to Apollo of Ismenus; at Ephesus there are the oxen of gold and the greater part of the pillars; and in the temple of Proneia at Delphi, a golden shield. All these survived to my lifetime; but other of

[48] Probably one of the most famous stories in *The Histories* considered as fiction is the reference to roughly dog-sized 'gold-diggings ants' in India, III 102-2. These ants are described to be faster than any other 'living animal' and, according to Herodotus' sources, very protective of their gold, 105-1. For Herodotus's sources see: How, W. W. and Wells J. (1957), Feix, J. (1980): 1289 and Marg, W. (1962).

[49] Gruben, Gottfried (2001): 380-395.

[50] The English translation is taken from the *Perseus online catalogue*. For a commented version on *The Histories* see: Feix, J. (1980).

απόλωλε τῶν ἀναθημάτων	the offerings were destroyed:[51]

These columns are certainly part of the structure of the temple of Artemis; the Greek word used for "column" is plural and the temple's *peristasis* required more than hundred.[52] Aside from the use as building integrated posts, there is also a possibility that the pillars mentioned are in fact several singular donations but by considering the prominence and immense size of the project, it is more likely that Croesus contributed towards its completion.

In Egypt Herodotus' attention was caught by supports taking human form; colossi are constructed in place of "pillars":

… , πᾶσάν τε περίστυλον ἐοῦσαν καὶ τύπων πλέην: ἀντὶ δὲ κιόνων ὑπεστᾶσι κολοσσοὶ δυωδεκαπήχεες τῇ αὐλῇ. …	… this court has an inner colonnade all around it and many cut figures; the roof is held up by great statues twenty feet high for pillars. …[53]

In Egyptian custom, such columns surrounding a courtyard were common. However, the replacement of columns with sculptures, i. e. structural active sculptures, is rare in Greece. So for Herodotus this was worth documenting. The fact that he mentions the roof indicates their use as part of a building. Herodotus mentions another two courtyards in Egypt, both of which are flanked by columns, and for the first he writes of their ornamentation:[54]

… , παστὰς λιθίνη μεγάλη καὶ ἠσκημένη στύλοισί τε φοίνικας τὰ δένδρεα μεμιμημένοισι καὶ τῇ ἄλλῃ δαπάνῃ: …	… it is a great colonnade of stone, richly adorned, the pillars made in the form of palm trees. …[55]

Compared to such a detailed description, the third courtyard appears almost plain:

[51] Herodotus, *The Histories*: I 92-1; Perseus online catalogue, English by A. D. Godley, 1920.

[52] As stated by Plini, the Artemision incorporated 127 columns. Modern reconstructions of this temple vary from 100 (Wood), 106 (Bammer) to 117 (Dinsmoor). For discussion and references see Ohnesorg (2007): 8 -10.

[53] Herodotus, *The Histories*: II 153; Perseus online catalogue, English by A. D. Godley, 1920.

[54] The style of a petrified palm is a regular element in the decoration of Egyptian capitals. Arnold, Dieter (1996); Philips, Peter (2002).

[55] Herodotus, *The Histories*: II 169-5; Perseus online catalogue, English by A. D. Godley, 1920.

ὀροφὴ δὲ πάντων τούτων λιθίνη κατά περ οἱ τοῖχοι, οἱ δὲ τοῖχοι τύπων ἐγγεγλυμμένων πλέοι, αὐλὴ δὲ ἑκάστη περίστυλος λίθου λευκοῦ ἁρμοσμένου τὰ μάλιστα. …	Over all this is a roof, made of stone like the walls, and the walls are covered with cut figures, and every court is set around with pillars of white stone very precisely fitted together. …[56]

Herodotus offers additional information regarding materials. He uses the term λίθου λευκοῦ (white stone) for the court, a term usually associated with (and translated as) marble. in the light of Egyptian custom, these three passages are most likely to refer to building integrated columns, showing again that κίον and στυλος do not denote structural context.

Columns as votives in sanctuaries

Herodotus is very selective when it comes to columns as sacred furniture in Greek sanctuaries. Comparing the small number of free-standing columnar offerings he mentioned to the large amount known from excavations shows that his focus is entirely on special dedications and their material or purpose.[57] Of all the columns he mentioned, the most unusual material are those for two pillars dedicated to a sanctuary of Heracles in Tyre (Phoenicia):

καὶ εἶδον πλουσίως κατεσκευασμένον ἄλλοισί τε πολλοῖσι ἀναθήμασι, καὶ ἐν αὐτῷ ἦσαν στῆλαι δύο, ἡ μὲν χρυσοῦ ἀπέφθου, ἡ δὲ σμαράγδου λίθου λάμποντος τὰς νύκτας μέγαθος. …	There I saw it, richly equipped with many other offerings, besides two pillars, one of refined gold, one of green stone: a great pillar that shone at night; …[58]

Both materials are less likely to have been found in a building integrated context than in a free-standing context. These markers were located outside in the sanctuary rather than inside a building, given the glowing effect of the green pillar at night.[59] In fact, Herodotus does not mention a temple explicitly, raising the

[56] Herodotus, *The Histories*: II 148-7; Perseus online catalogue, English by A. D. Godley, 1920.

[57] This becomes evident as Herodotus refers to well established sanctuaries as Delphi or Ephesus, according to the archaeological evidence these sites were filled by offerings during his period.

[58] Herodotus, *The Histories*: II 44-2; Perseus online catalogue, English by A. D. Godley, 1920 with an alteration of the translation by the author. The original translation offered by Godley translates σμαράγδου λίθου with ‘emerald’ but the translation of σμαράγδου with the ‘green’ is also a possibility and, considering emerald as material for constructions, more likely.

[59] Zwickel, Wolfgang (1999): 118.

question of whether the site contained one at all.[60] As part of the equipment of the sanctuary the two posts stand out due to their exceptional materials. Since sanctuaries tend to be cluttered by dedications they must have been tall; In fact,Herodotus mentions their height as "great". Whilst the documentation of gold as a material for one of the columns offers little space for speculation, the term "green stone" is not clearly defined. In comparison to the translation of λίθου λευκοῦ as "white marble", a translation of σμαράγδου λίθου as "green marble" is feasible, although malachite remains also as an option.

Herodotus mentions another post, at Delphi, crafted from metal. A special post that was erected as a dedication for Apollo:

… Αἰγινῆται δὲ πυθόμενοι ἀνέθεσαν ἀστέρας χρυσέους, οἳ ἐπὶ ἱστοῦ χαλκέου ἑστᾶσι τρεῖς ἐπὶ τῆς γωνίης, ἀγχοτάτω τοῦ Κροίσου κρητῆρος.	… When the Aeginetans learned that, they dedicated three golden stars which are set on a bronze mast, in the angle, nearest to Croesus' bowl.[61]

The post described by Herodotus should not necessarily be interpreted as an architectural column; a vertical element consisting out of a base, a shaft and a capital. Herodotus uses the Greek word ἱστός which is a general term for something upright or vertically standing. Interpreting the post as the reproduction of a vessels' mast links the dedication to the naval victory for which the mast was commissioned. A vessel's mast as a vertical marker erected on land required a firm fitting as with any free-standing object. Considering that this post was probably not in the shape of a column, a large socket, similar to those used for the wooden masts of naval vessels, is possible.

Columns as memorials

Two free-standing markers used as objects of remembrance are mentioned in the text. Both refer to battles and are constructed in honour of the valour of the dead; the first on a marketplace at Samos:

καί σφι τὸ κοινὸν τῶν Σαμίων ἔδωκε διὰ τοῦτο	For this deed the Samian people granted that their

[60] Herodotus, *The Histories*: II 44-1. The word used in the text is ἱρὸν, a word which is a general term for 'sanctuary' and not necessarily referring to a building.

[61] Herodotus, *The Histories*: VIII 122; Perseus online catalogue, English by A. D. Godley, 1920.

τὸ πρῆγμα ἐν στήλῃ ἀναγραφῆναι πατρόθεν ὡς ἀνδράσι ἀγαθοῖσι γενομένοισι, καὶ ἔστι αὕτη ἡ στήλη ἐν τῇ ἀγορῇ.	names and patronymics should be engraved on a pillar as brave men; this pillar now stands in their market-place. …[62]

The other for the Spartans who died in the battle of Thermopylae:

ἐπιγράμμασι μέν νυν καὶ στήλῃσι, ἔξω ἢ τὸ τοῦ μάντιος ἐπίγραμμα, Ἀμφικτύονες εἰσὶ σφέας οἱ ἐπικοσμήσαντες:	Except for the seer's inscription, the Amphictyons are the ones who honored them by erecting inscriptions and pillars. …[63]

The two funerary stelae share other aspects in common beside their purpose; both are erected in a public place, not in a sanctuary, and both contain inscriptions. Herodotus does not state the material for their construction but, regarding the presence of an inscription and the time of their erection (after 480 BC, the battle of Thermopylae), stone was a common material for such a construction and appears to be the preferred material.

Columns as Landmark

Many pillars or columns mentioned in the text were used as landmarks, but none of them were erected by Greeks. The reason for their erection varies – they were used either to indicate the possession of the land, to mark a border or to remember outstanding achievements in construction at their location.

The oldest free-standing posts mentioned by Herodotus date back to the 2nd millennium BC, erected during the reign of Egyptian ruler Sesotris.[64] Despite their age, Herodotus states that he saw at least one of them himself, the one in Palestine:

αἱ δὲ στῆλαι τὰς ἵστα κατὰ τὰς χώρας ὁ Αἰγύπτου βασιλεὺς Σέσωστρις, αἱ μὲν πλεῦνες οὐκέτι φαίνονται περιεοῦσαι, ἐν δὲ τῇ Παλαιστίνῃ Συρίῃ	As to the pillars that Sesostris, king of Egypt, set up in the countries, most of them are no longer to be seen. But I myself saw them in the Palestine

[62] Herodotus, *The Histories*: VI 14-3; Perseus online catalogue, English by A. D. Godley, 1920.
[63] Herodotus, *The Histories*: VII 228-4; Perseus online catalogue, English by A. D. Godley, 1920.
[64] Herodotus conveys that the pillars were set up to indicate the extent of his invasion and the manner of which the citizens defended their country (*The Histories* II 102- 4/5). One of the 'pillars' mentioned is identified as the rock-cut relief near Smyrna but, as already mentioned in chapter I, this is a Hittite relief and the association with the Egyptian ruler Sesostris is false.

αὐτὸς ὥρων ἐούσας καὶ τὰ γράμματα τὰ εἰρημένα ἐνεόντα καὶ γυναικὸς αἰδοῖα.

district of Syria, with the aforesaid writing and the women's private parts on them.[65]

And another two are documented for Thrace and Scythia:

ταῦτα δὲ ποιέων διεξήιε τὴν ἤπειρον, ἐς ὃ ἐκ τῆς Ἀσίης ἐς τὴν Εὐρώπην διαβὰς τούς τε Σκύθας κατεστρέψατο καὶ τοὺς Θρήικας. ἐς τούτους δέ μοι δοκέει καὶ προσώτατα ἀπικέσθαι ὁ Αἰγύπτιος στρατός: ἐν μὲν γὰρ τῇ τούτων χώρῃ φαίνονται σταθεῖσαι αἱ στῆλαι, τὸ δὲ προσωτέρω τούτων οὐκέτι.

He [Sesostris] marched over the country doing this until he had crossed over from Asia to Europe and defeated the Scythians and Thracians. Thus far and no farther, I think, the Egyptian army went; for the pillars can be seen standing in their country, but in none beyond it.[66]

The fact that each column is inscribed with the name of Sesostris, and that the inscription was still visible at the time of Herodotus' visit favours the use of stone, at least for some of the pillars. This suggestion is further supported by the prevalent use of stone in Egyptian construction custom.

Herodotus is more explicit about materials when he describes pillars constructed by the Persians. Darius, a ruler of Persia in the 6th and 5th century BC, commissioned two pillars to honour an outstanding construction of his Greek engineers:

[1] ὁ δὲ Δαρεῖος ὡς ἐθεήσατο τὸν Πόντον, ἔπλεε ὀπίσω ἐπὶ τὴν γέφυραν, τῆς ἀρχιτέκτων ἐγένετο Μανδροκλέης Σάμιος: θεησάμενος δὲ καὶ τὸν Βόσπορον στήλας ἔστησε δύο ἐπ᾽ αὐτοῦ λίθου λευκοῦ, ἐνταμὼν γράμματα ἐς μὲν τὴν Ἀσσύρια ἐς δὲ τὴν Ἑλληνικά, ἔθνεα πάντα ὅσα περ ἦγε:

[2] τῇσι μέν νυν στήλῃσι ταύτῃσι Βυζάντιοι κομίσαντες ἐς τὴν πόλιν ὕστερον τούτων ἐχρήσαντο πρὸς τὸν βωμὸν τῆς Ὀρθωσίης Ἀρτέμιδος, χωρὶς ἑνὸς λίθου: οὗτος δὲ κατελείφθη παρὰ τοῦ Διονύσου τὸν νηὸν ἐν Βυζαντίῳ, γραμμάτων Ἀσσυρίων πλέος.

[1] After having viewed the Pontus, Darius sailed back to the bridge, whose architect was Mandrocles of Samos; and when he had viewed the Bosporus also, he set up two pillars of white marble by it, engraving on the one in Assyrian and on the other in Greek characters the names of all the nations that were in his army:

[2] These pillars were afterward carried by the Byzantines into their city and there used to build the altar of Orthosian Artemis, except for one column covered with Assyrian writing that was left beside the temple of Dionysus at Byzantium. …[67]

[65] Herodotus, *The Histories*: II 106-1; Perseus online catalogue, English by A. D. Godley, 1920.
[66] Herodotus, *The Histories*: II 103-1; Perseus online catalogue, English by A. D. Godley, 1920.
[67] Herodotus, *The Histories*: IV 87-1/2; Perseus online catalogue, English by A. D. Godley, 1920.

Both columns are described to be λίθου λευκοῦ (white stone) a description commonly associated with marble, reflecting perhaps the work of Greek masons despite being commissioned by Darius. After all, Darius commissioned a bridge from the Greek engineer Mandrocles of Samos.

The text mentions another two pillars to be erected by the Persians. Darius commissioned one as he and his men reached the river Tearos:

ἐπὶ τοῦτον ὦν τὸν ποταμὸν ἀπικόμενος ὁ Δαρεῖος ὡς ἐστρατοπεδεύσατο, ἡσθεὶς τῷ ποταμῷ στήλην ἔστησε καὶ ἐνθαῦτα, γράμματα ἐγγράψας λέγοντα τάδε.	Having come to this river and camped there, then, Darius was pleased with the sight of it, and set up yet another pillar there, cut with this inscription:[68]

Secondly, the sailors of Xerxes, son of Darius, erected a landmark which is remarkable for its location:

… ἐνθαῦτα οἱ βάρβαροι ἐπειδὴ στήλην λίθου ἐπέθηκαν κομίσαντες ἐπὶ τὸ ἔρμα, …	… The barbarians then brought a pillar of stone and set it on the reef, …[69]

Since the country of origin of the 'barbarians' erecting the pillar cannot be identified, the nature of the post remains uncertain. Several nations served Xerxes during his invasion of Greece and the construction of a vertical marker was ostensibly also part of their culture. This pillar is used as an indicator for a nautical passage, a landmark made of stone.

The last pillar mentioned for this purpose within the text is commissioned by the Lydian leader Croesus to mark the border of his realm:

ἐκ δὲ Κολοσσέων ὁ στρατὸς ὁρμώμενος ἐπὶ τοὺς οὔρους τῶν Φρυγῶν καὶ Λυδῶν ἀπίκετο ἐς Κύδραρα πόλιν, ἔνθα στήλη καταπεπηγυῖα, σταθεῖσα δὲ ὑπὸ Κροίσου, καταμηνύει διὰ γραμμάτων τοὺς οὔρους.	From Colossae the army held its course for the borders of Phrygia and Lydia, and came to the city of Cydrara, where there stands a pillar set up by Croesus which marks the boundary with an inscription.[70]

[68] Herodotus, *The Histories*: IV 91-1; Perseus online catalogue, English by A. D. Godley, 1920.
[69] Herodotus, *The Histories*: VII 183-2; Perseus online catalogue, English by A. D. Godley, 1920.
[70] Herodotus, *The Histories*: VII 30-2; Perseus online catalogue, English by A. D. Godley, 1920.

The material of this post is not given, but the reference to an inscription suggests the use of stone. This is supported by the fact that, by the time Croesus had become ruler, stone was the main medium of execution in architecture.

Herodotus mentions several posts in *The Histories*, most of them free-standing (table 2.1). The author's concern was evidently to document historical events before his lifetime rather than to discuss the architecture of his period. The descriptions of posts and pillars indicate that vertical markers were a common element of his period. He does not mention the use of wood, the most usual material given is stone (the majority is stated to be made from this material) but the occasionally the importance of this element is enhanced by the use of precious materials such as bronze and gold, as well as the unusual use of malachite. Compared to these fascinating materials for an apparently common element, the use of timber is supposedly too common to mention.

Intermediate Summary

The investigation of selected ancient literature demonstrates that most of the columns described were free-standing. The three authors studied make frequent reference to them, indicating the Greeks employed free-standing posts from at least the middle of the 8th century BC onwards. The material referred to varies from wood to stone or metal. Whether columns used in a mythological context actually refer to existing artefacts is debatable. It seems plausible that Hesiod evoked existing monuments of his time even though he might exaggerate their size. Not only do the materials differ in the texts, but the Greek term used for "post" varies as well. Hesiod refers twice in his *Theogony* to posts or columns, at least one of which seems to have been free-standing. In both instances the posts are described with the term κιον, but this does not necessarily imply the same structural context. It also remains possible that the silver columns refer to a *peristasis* instead. Whether the use of Greek term κιον referred to a free-standing post cannot be determined according to Hesiod's *Theogony* alone.

More differentiated is the situation for the works of Homer and Herodotus. Both authors use similar language for columns; their general term for a free-standing marker is στήλη, but the texts also give two exceptions: ιστο͂υ and σημα. Moreover, the *Odyssey* twice documents the dedication of an oar as a vertical marker, using the Greek term for "oar" and therefore defining the material for their construction. It can be noted that generally the term στήλη suggests the construction of free-standing pillar, whilst κιον is more likely to refer to a building integrated post (table 2.1). Herodotus on the other hand also uses the term περίστυλος and the similar στύλοισί for a building integrated context. The *Iliad* deals exclusively free-standing columns and makes no mention of the word κιον, referring to all posts with the term στήλη.[71] With this term comes the possibility that it does not necessarily translate to a column complete with a base, shaft and capital – it could also refer to a simple pillar or slab considering that tomb slabs were also called stelai.

[71] McGowan, Elizabeth (1995): 623.

Author	Building-integrated	Unknown	Freestanding				Metaphor
			Wood	Stone	Unknown	Special	
Hesiod		Theogony 779 κίοσιν			Theogony 522 κίον᾽		
Homer	Odyssey 1.127 23.90 κίονα	Odyssey 17.29 22.466 κίονα / κίονος	Iliad 23.327-331 σημα		Iliad 11.371 στήλη		Iliad 17.434 στήλη
	Odyssey 6.307 8.66 8.473 κίονι / κίονα	Odyssey 23.191 κίων	Odyssey 12.15 ερετμόν		Iliad 16. 457 16. 675 στήλη		Iliad 13.437 στήλην
	Odyssey 22.176 22.193 κιον		Odyssey 11.129 ερετμόν		Odyssey 12.14 στήλην		
Herodotus	Histories I 92-1 κιόνων	Histories II 148-7 περίστυλος		Histories IV 87-2 στήλος	Histories II 102-4/5 II 103-1 II 106-1 στήλας / στήλησι	Histories II 44-2 στήλαι	Histories V 118-1 στήλας
	Histories II 153 Περίστυλον (αντι δε κιόνων)	Histories II 169-5 στύλοισί		Histories IV 91 στήλην	Histories VII 30-2 στήλη	Histories VIII 122 ιστῦυ	Histories I 202-4 Ηρακλέων στηλέων
				Histories VI 14-3 στήλη	Histories VII 228-4 στήλησι		Histories IV 184-4 κίονα τοῦ οὐρανοῦ
				Histories VII 183-2 στήλην			

Table 2.1: Mentions of columns in the texts of Hesiod, Homer and Herodotus.

As the investigation shows, Homer also uses the term στήλη to describe the attributes of a free-standing column when it comes to a metaphorical context. To him, a free-standing marker is of such an admirable firmness that virtuous creatures are attributed with them. An exception to the sole use of the term στήλη can be found in *The Histories* as Herodotus uses both terms to describe the Pillars of Hercules. He uses the familiar term Ἡρακλέων στηλέων [I 202-4] as well as κίονα τοῦ οὐρανοῦ [IV 184-4] to describe Mount Atlas later in the text. Using the term as an indicator of a building-integrated context does not seem applicable for a mountain. Although, it is possible that the Pillars of Hercules are referring to a free-standing element, whilst Mount Atlas, a "required support of heaven", is in fact a 'column' integrated in the wider context of a building.

Pausanias – a friend of Greek culture

Pausanias comprises a special position among the group of authors who documented Greek monuments of the 8th and 5th century BC. As a work written in the 2nd century AD it was not only addressed to a well-educated Roman audience it was also written during a period of Roman supremacy.[72] Nonetheless Pausanias' *Descriptions of Greece* are of immense informative value for monuments of Greek origin since his work deals with monuments constructed before his time that were still present during his visit. During the period in which the work was written, stone, often marble, was a common material for construction, and all the major monumental constructions in Greece had been completed. His focus was not on the size of monuments, but instead on documenting the history of Greece, and with it objects of great age. The use of timber for these monuments is important for Pausanias to highlight, as he associates it with constructions of the forefathers.[73] On his journey, he collects a significant amount of information about statues made of wood or carved in ethnic forms, and these are addressed as Daedala in order to create a connection to the mythological (Cretan) artist Daedalus.[74] As a traveller through Greece, Pausanias describes objects he witnessed with his own eyes, making the *Descriptions of Greece* a very creditable source indeed.

In the *Descriptions of Greece*, Pausanias makes only one reference to a column made of timber in a free-standing context, and this is probably the oldest monument described in the text. The text also describes several posts of uncertain material, although their environment would suggest they were possibly also made from timber. In addition, wood is mentioned as a construction material for buildings such as the Temple of Horse Poseidon near Mantinea [VIII 10-2], and an earlier temple of Apollo at Delphi [X 5-9/13]. Both timber constructions date to times prior to Pausanias creative period and have already been replaced by constructions of stone. It is important for Pausanias to refer to these buildings as it

[72] On Pausanias' enterprise see: Arafat (1996); Alcock (2002); Georgopoulou *et al. (*2007).
[73] Pausanias, *Descriptions of Greece*: II 19-3.
[74] Pausanias, *Descriptions of Greece*: VIII 53-8 and IX 3-2.

indicates the old age of the two Greek sites, but also identifies that wood is the material favoured by ancestors. Aside from these two already deconstructed temples, Pausanias documents existing buildings with columns made of wood.

Wooden Columns as part of a building

It appears that buildings with timber columns were rare during Pausanias lifetime; only two are mentioned in the text at all. Both buildings are in the district of Elis (on the Peloponnese) and both structures are sought to be of high age. The more prominent of the two is the old temple of Hera at Olympia, which was a stone construction at Pausanias' time, but still had one of its original wooden columns intact at the rear of the porch:[75]

… ἐργασία μὲν δή ἐστι τοῦ ναοῦ Δώριος, κίονες δὲ περὶ πάντα ἑστήκασιν αὐτόν: ἐν δὲ τῷ ὀπισθοδόμῳ δρυὸς ὁ ἕτερος τῶν κιόνων ἐστί. …	… The style of the temple is Doric, and pillars stand all round it. In the rear chamber one of the two pillars is of oak. …[76]

The first monumental temple of Hera, which was probably equipped with wooden columns, is supposed to have been constructed at the very beginning of the 6th century BC.[77] Two alternative theories exist for the replacement of the wooden posts with columns of stone – this either occurred in sections, i.e. as soon as a set of columns was finished, or during a single effort, by just leaving a single oak column in the rear chamber.[78] There is little doubt that the temple was partially a timber construction in first instance, a solution which also seems appropriate regarding the early date of the building. The reasons for the replacement are less certain – either the posts began to decay, requiring a replacement to not endanger the construction, or changes in architectural styles dictated a change, or potentially even a combination of both reasons.

[75] The English translation is taken from the *Perseus online catalogue*. For a commented version of *Descriptions of Greece* see: Henderson, J. (2005):

[76] Pausanias, *Descriptions of Greece*: V 16-1 Perseus online catalogue, English (1918).

[77] Barletta, Barbara (2001): 83; Gruben, Gottfried (2001): 51-53.

[78] For the interpretation of the construction of the temple see latest Arafat (1995), Moustaka (2002). Due to the technical difficulties of replacing columns partially after the completion of a building, Michael Donderer argues for a replacement after enough columns had been 'donated' and stored alike votives in the sanctuary. Donderer, Michael (2005): 12.

The second building that Pausanias describes as having timber columns is referred to as the tomb of Oxylos, visible at the market of the city of Elis:

Ἠλείων δὲ ἐν τῇ ἀγορᾷ καὶ ἄλλο τοιόνδε εἶδον, ναοῦ σχῆμα: ἔστι δὲ οὐχ ὑψηλόν, καὶ τοῖχοι μὲν οὐκ εἰσί, τὸν ὄροφον δὲ δρυὸς ἀνέχουσιν εἰργασμένοι κίονες.

In the market-place of Elis I saw something else, a low structure in the form of a temple. It has no walls, the roof being supported by pillars made of oak. …[79]

Identifying this pavilion as the tomb of Oxylos implies a very old construction indeed and it is more probable to assume that the association to Oxylos was attached to the pavilion afterwards. According to Strabo, Oxylos was the founder of the first settlement at Olympia; his reign is dated to about two generations after the War of Troy, thus dating the pavilion into the second half of the first millennium BC.[80] While the survival of any construction of this age is a feat in itself, that the pavilion was a timber construction is even more impressive.

The wooden column described as free-standing

Of all the columns mentioned in the text, the majority were free-standing, and only one is explicitly said to be made of wood. This pillar is still standing during Pausanias' visit to the sanctuary of Olympia; the pillar is located next to the temple of Zeus:

ἣν δὲ καλοῦσιν Οἰνομάου κίονα καὶ οἱ Ἠλεῖοι καλοῦσιν, ἔστι μὲν πρὸς τὸ ἱερὸν τοῦ Διὸς ἰόντι ἀπὸ τοῦ μεγάλου βωμοῦ: τέσσαρες δέ εἰσιν ἐν ἀριστερᾷ κίονες καὶ ἐπ᾽ αὐτῶν ὄροφος, πεποίηνται δὲ ἔρυμα εἶναι ξυλίνῳ κίονι πεπονηκότι ὑπὸ τοῦ χρόνου καὶ τὰ πολλὰ ὑπὸ δεσμῶν συνεχομένῳ. οὗτος ὁ κίων ἐν οἰκίᾳ τοῦ Οἰνομάου, καθὰ λέγουσιν, εἱστήκει: κεραυνώσαντος δὲ τοῦ θεοῦ τὴν μὲν ἄλλην ἠφάνισεν οἰκίαν τὸ πῦρ, ὑπελίπετο δὲ τὸν κίονα ἐξ ἁπάσης μόνον.

What the Eleans call the pillar of Oenomaus is in the direction of the sanctuary of Zeus as you go from the great altar. On the left are four pillars with a roof on them, the whole constructed to protect a wooden pillar which has decayed through age, being for the most part held together by bands. This pillar, so runs the tale, stood in the house of Oenomaus. Struck by lightning the rest of the house was destroyed by the fire; of all the building only this pillar was left.[81]

Named after Oenomaus, this pillar is considered to be very special. Its prominence becomes evident not only due to the efforts taken in its conservation, but also due

[79] Pausanias, *Descriptions of Greece*: VI 24-9; Perseus online catalogue, English (1918).
[80] Strabo, *Geographica*: VIII 3-30.
[81] Pausanias, *Descriptions of Greece*: V 20-6; Perseus online catalogue, English (1918).

to the association it has with the time of the Hero from Olympia. The wooden post is sheltered by a pavilion and held together by ties (δεσμων), a measure that suggests a shaft that already showed signs of decay. However, its erection as part of the house of Oenomaus has to be questioned. Assuming that the house of Oenomaus existed would date this support into his lifetime; he is supposed to have lived around the 12th century BC.[82] It hardly seems possible that a timber shaft stood in the Altis for almost one-and-a-half millennia, and a different interpretation regarding the erection of this post has yet to be found. Nonetheless, it can be assumed that the post is of significant age and its original purpose (attached with age) may have been forgotten.

Several possibilities of the post's original purpose have been proposed, of which some seem plausible. As suggested by Eric Brulotte the post may have served as a turning marker for the first stadium at Olympia.[83] This solution moves the Archaic stadium closer to the central area of the sanctuary, and therefore closer to the temple of Zeus, for the post to remain at its original position. Such implies a *temenos* of smaller extents which is likely, considering the development of sanctuaries. As a turning marker is constructed to stand vertically on its own, there would have been no structural changes necessary to convert the pillar into a dedicatory column; an action that would have been necessary for a column that served as part of a building in the first instance. This solution also explains the absence of a dedication on top of the column.

An alternative possibility arises from the unusual sequence of construction in which the temple of Hera was executed. As already mentioned, the wooden columns of the *peristasis* of the temple had been replaced by columns made of stone. Michael Donderer suggests that this action was performed not

[82] Against the wooden shaft used in the context of a building, as offered by Pausanias, stands that the post is unlikely to remain vertical after the removal of the structure. If the timber shaft is not firmly driven into the ground it requires a base as its counterweight to avoid toppling.

[83] Brulotte, Eric (1994).

incrementally, but in a single attempt or perhaps two.[84] Further Donderer proposes that the stone columns, as used for the building's *peristasis* later, were 'stored' on foundations similar to those used for free-standing votive columns within the Altis. Due to the differences in the execution of their capitals not only a creation at different times has to be assumed but also a creation of the columns for different elements, as individual free-standing donations. As soon as enough stone supports became available (most likely through donations), the replacement took place, by only being one column short and thereby keeping one wooden column in the rear.[85] Such interpretation would explain the difference in the execution of the capitals, as well as the different proportions of their shafts. The wooden supports of the temple, now out of use, would have to remain in the sanctuary, as is the Greek custom for any dedication. The fate of the columns was sealed by probably being either buried or burned.

The wooden columns were part of the building, and as the building was a dedication to the Goddess it is not suitable that they were removed from the sanctuary. Another alternative is the re-erection - one of the best preserved columns could have been placed to the position which became later the 'pillar of Oenomaus'. This theory also partly reflects the story given by Pausanias, as it refers to their previous use as component of a house (though the temple of Hera, not the house of the local Hero). Considering that the story of the last existing "remnant of a famous house" was added centuries after the exchange happened, the original use of the obviously old-fashioned column (since it is made of timber) may have been forgotten over time.[86] Interpreting the pillar of Oenomaus as a former support of the temple of Hera would also explain the absence of a dedication. Nevertheless, with the change of the structural context arises a structural problem (i.e. from free-standing to building-integrated) and this applies

[84] The varieties of shapes used for the existing Doric capitals of stone indicate different periods for their creation. In fact, the differences in their execution are described by Gruben as an entire 'codex of capitals' (Kapitellalbum), Gruben, Gottfried (2001): 52. For the discussion see Donderer, Michael, (2005).

[85] A shortcoming as this might explain why Pausanias was able to witness the singular wooden column in the rear porch. Pausanias, *Descriptions of Greece*: V 16-1.

[86] Pausanias, *Descriptions of Greece*: V 20-7; Perseus online catalogue, English (1918).

for the stone columns as well as for the wooden columns. Such a transformation is only possible due to the compact design of the Doric style which already provides a large standing surface at their bottom.[87] Apart from the temple's unfamiliar composition, this does not pose a problem for the columns made in stone. As convincing as this solution might seem, it remains questionable whether the lower diameter of a wooden column would have been large enough to secure the firm stand of its new free-standing context. While converting a free-standing column into a building integrated column is straightforward, the reverse creates structural difficulties. A post as part of a building is not designed to stand on its own; it is the structural context of the building which keeps the post in place. Due to the narrow diameter at the bottom of the shaft, as is common for the wooden supports of skeleton constructions, a timber post is prone to topple if removed from its structure. Thus the pillar might have been initially free-standing, although if this were the case, the question still remains as to why Pausanias does not mention a dedication on its top.

Any of these solutions is possible, yet this pillar is not the only remaining wooden exhibit within the sanctuary dating to the Archaic Period. Pausanias describes the existence of two ancient wooden statues next to the pillar which also display signs of decay.[88] Both sculptures show victorious athletes and refer to the fifty-ninth and the sixty-first Olympic festivals respectively, both in the second half of the 6th century BC. Assuming this wooden ensemble was created about the same time and remained together at the same location, the erection of the dedicational column, or the replacement of the temples' supports is potentially consistent with both the two scenarios just mentioned.

[87] Apart from the variations in the capital design, the columns also display a large variety in the lower columns diameter. The diameters vary between 1.00 m to 1.28 m, which is, with a height of 5.21 m, within the compact proportions of the Doric style (table 3.1). Columns of such stoutness – wood or stone - are not facing difficulties in standing perpendicular without further precautionary measures.

[88] Pausanias, *Descriptions of Greece*: VI 18-7.

Free-standing columns with the potential of a wooden shaft

There is little information provided in the text regarding the actual material that the majority of free standing columns consist of. Given this lack of detail, it is necessary to look to further information. Particularly when Pausanias describes pillars being of age, wood seems to be a natural choice but this statement could also refer to an old column design, and therefore not necessarily timber but stone instead. The mention of columnar age alone should not be taken as an automatic indication of timber but, in addition to age, Pausanias also refers to the environments the free-standing columns are situated in. According to the setting or certain incidents that have happened around these posts, timber as the material for their shafts can be suggested. Such an assumption is usually related to the columns' height, weight and stability – in other words, their physical suitability for a firm stand.

Pausanias writes that the oldest image of Hera in her sanctuary near Mycenae is made of wood and placed on a column:

λέγεται δὲ παρεστηκέναι τῇ Ἥρᾳ τέχνη Ναυκύδους ἄγαλμα Ἥβης, ἐλέφαντος καὶ τοῦτο καὶ χρυσοῦ: παρὰ δὲ αὐτήν ἐστιν ἐπὶ κίονος ἄγαλμα Ἥρας ἀρχαῖον. τὸ δὲ ἀρχαιότατον πεποίηται μὲν ἐξ ἀχράδος, ἀνετέθη δὲ ἐς Τίρυνθα ὑπὸ Πειράσου τοῦ Ἄργου, Τίρυνθα δὲ ἀνελόντες Ἀργεῖοι κομίζουσιν ἐς τὸ Ἡραῖον: ὃ δὴ καὶ αὐτὸς εἶδον, καθήμενον ἄγαλμα οὐ μέγα.

By the side of Hera stands what is said to be an image of Hebe fashioned by Naucydes; it, too, is of ivory and gold. By its side is an old image of Hera on a pillar. The oldest image is made of wild-pear wood, and was dedicated in Tiryns by Peirasus, son of Argus, and when the Argives destroyed Tiryns they carried it away to the Heraeum. I myself saw it, a small, seated image.[89]

The assumption that the pillar is of a similar age to the seated sculpture would support the idea that both elements are made of timber. Considering that the sculpture had been taken to Mycenae also suggests that the entire post was relocated, an interpretation which finds support in the size of the icon as stated by Pausanias. This dedication was evidently located inside a building, alongside the ivory and gold image Pausanias mentions, to protect both from decay.[90]

[89] Pausanias, *Descriptions of Greece*: II 17-5; Perseus online catalogue, English (1918).

[90] The first temple at Argos is dated to the 2nd half of the 7th century BC, Gruben (2001): 108. For the discussion on the early periods of the sanctuary of Hera at Argos see Wright (1982): 186,

The erection of dedicational columns is a prestigious; Pausanias describes two of such offerings for a sanctuary within the enclosure of a remote sanctuary in Arcadia. These two columns are placed in front of an altar and can certainly be assumed to be in a free-standing context:

ἔστι δὲ ἐπὶ τῇ ἄκρᾳ τῇ ἀνωτάτω τοῦ ὄρους γῆς χῶμα, Διὸς τοῦ Λυκαίου βωμός, καὶ ἡ Πελοπόννησος τὰ πολλά ἐστιν ἀπ᾽ αὐτοῦ σύνοπτος: πρὸ δὲ τοῦ βωμοῦ κίονες δύο ὡς ἐπὶ ἀνίσχοντα ἑστήκασιν ἥλιον, ἀετοὶ δὲ ἐπ᾽ αὐτοῖς ἐπίχρυσοι τά γε ἔτι παλαιότερα ἐπεποίηντο	On the highest point of the mountain is a mound of earth, forming an altar of Zeus Lycaeus, and from it most of the Peloponnesus can be seen. Before the altar on the east stand two pillars, on which there were of old gilded eagles.[91]

He does not mention a building and indeed the remote location on a mountain peak makes a temple unlikely. He also states that the columnar dedications are near the altar, close to the highest point of the mountain. This location makes it prestigious since "from it most of the Peloponnesus can be seen" and vice versa. Pausanias states that the eagles are of old and so might be the columns. It is their location, exposing the shafts to nature that effectively negates the idea of timber. Even though the two shafts might have been crafted from this material prior to the time of Pausanias' visit, durable stone is the material for this construction during his period. It is the fact that he mentions these two columns (κίονες) that merely suggests the unusual use of wood but, in any case, it indicates the prominence of free-standing columns even for remote areas and difficult terrain.

Also of considerable age are a set of seven pillars not far from a tomb in the region of Laconia. The tomb is supposed to be that of Tyndareus, the glorious ruler of Sparta and the father of Helen (Menelaos' famous wife) thus dating the monument nearby prior to the Trojan War:

… ἐξορκώσας δὲ τὸν ἵππον κατώρυξεν ἐνταῦθα. κίονες δὲ ἑπτὰ οἳ τοῦ μνήματος τούτου διέχουσιν οὐ πολύ, κατὰ τρόπον οἶμαι τὸν ἀρχαῖον, οὓς ἀστέρων	… When he had sworn the suitors he buried the horse here. Seven pillars, which are not far from this tomb (...) in the ancient manner, I believe,

Antonaccio (1882): 85. The concept of sheltering a cultic statue during the early 8th century BC is suggested for the sanctuary of Hera at Samos, Walter, Hans (1965): 35. For a theory on the need of an icon shelter for an evolving society see Svenson-Evers, Hendrik (1996).

[91] Pausanias, *Descriptions of Greece*: VIII 38-7; Perseus online catalogue, English (1918).

τῶν πλανητῶν φασιν ἀγάλματα. … which they say are images of the planets. …[92]

As tomb markers that survived a significant period of time, these pillars are likely to be made of stone, although there is a potential of timber considering the use of the term 'ancient manner'. Pausanias uses this phrase in general when discussing timber constructions, but another interpretation for this term is possible. Putting the durability of these markers into account this phrase might simply refer to stone constructions with an old-fashioned design. An interpretation as such finds support by the oldest building components documented, which display a surface that indicates tool markings related to woodworking techniques.[93] Pausanias may have intended to offer further information regarding the meaning of 'ancient manner', but unfortunately the text is corrupted at this point.

The last of the pillars with a potential wooden shaft is the funerary monument of Orpheus. The *Descriptions of Greece* document that the singer's remains were buried twice, each time being placed in an urn on top of a free-standing column. The first was erected near Libethra, a city on Mount Olympus:

[10] … καί ποτε ὠθοῦντες ἀλλήλους καὶ ἐρίζοντες ὅστις ἐγγύτατα ἔσται τῷ ποιμένι ἀνατρέπουσι τὸν κίονα, καὶ κατεάγη τε ἀπ᾽ αὐτοῦ πεσοῦσα ἡ θήκη καὶ εἶδεν ἥλιος ὅ τι ἦν τῶν ὀστῶν τοῦ Ὀρφέως λοιπόν.

[10] … And jostling one another and striving who could get nearest the shepherd they overturned the pillar, the urn fell from it and broke, and the sun saw whatever was left of the bones of Orpheus.94

For the second assembly the column, with the urn on top, was constructed on a road near the city of Dium, in Boeotia, and probably still standing during Pausanias' visit:

[92] Pausanias, *Descriptions of Greece*: III 20-9; Perseus online catalogue, English (1918).

[93] Gruben, Gottfried (1965). Gruben states that the monumental free-standing stone column of the Aphaia sanctuary (Aegina), betrays a technique similar to carpentry. In addition to this statement, the imprint of woodworking tools can be confirmed on early building components of stone, Hellner, Nils (2010). Wesenberg, Burkhardt (1971) links the genesis of the Doric order to an evolution of the shape from a "pre-monumental, [...] non- stone capital", 51-52. Alzinger (1982) sees the origin of the Doric order connected to the material timber.

[94] Pausanias, *Descriptions of Greece*: IX 30-10; Perseus online catalogue, English (1918).

[7] … ἰόντι δὲ ἐκ Δίου τὴν ἐπὶ τὸ ὄρος καὶ στάδια προεληλυθότι εἴκοσι κίων τέ ἐστιν ἐν δεξιᾷ καὶ ἐπίθημα ἐπὶ τῷ κίονι ὑδρία λίθου, ἔχει δὲ τὰ ὀστᾶ τοῦ Ὀρφέως ἡ ὑδρία, καθὰ οἱ ἐπιχώριοι λέγουσι.

[7] … Going from Dium along the road to the mountain, and advancing twenty stades, you come to a pillar on the right surmounted by a stone urn, which according to the natives contains the bones of Orpheus.[95]

After the column collapsed, the bones were taken by the populace of Dium and placed into a stone urn which then was placed on top of another - a second, column. Considering that this funerary marker was still in existence during Pausanias' visit supports stone as material; however, several clues imply that the first support of the famous singers' bones was executed with a wooden shaft. Due to its age, wood can generally be assumed for this marker, but the incident that led to the collapse offers more information. The monument was of importance for the city of Libethra due to an oracle that predicted a curse if Orpheus' bones were exposed to daylight. As the story tells, Orpheus was a person of such an importance that even in death, he still had an effect on his environment; nightingales sang louder and sweeter when nesting on his funerary column.[96] The shepherd mentioned in the passage, leaning against the post, and while asleep, started to sing until the accident described happened. The force required to overturn the column raises questions about the firmness of its fitting, and thus allows conjecture on the material of its shaft.

It can be inferred that the column is taller than a man, considering that the "jostling" and "striving" caused the column to overturn and thus the urn to break, rather than any contact being made with the urn directly. For a column to be able to overturn suggests that it is a top-heavy construction. Due to the weight of a stone shaft, a column with such is not only benefitting from an increased stability in general, it also has a lower centre of gravity than a column with a wooden shaft; therefore the presence of the urn on top of the monument has a lesser effect on its stability. Considering that the incident was an accident, the column is more likely to have been the weaker construction of the two, i.e. timber.

[95] Pausanias, *Descriptions of Greece*: IX 30-7; Perseus online catalogue, English (1918).
[96] Pausanias, *Descriptions of Greece*: IX 30-6.

On the other hand, the force required to stir a well-built stone column must have been immense as implied by a sacrifice Pausanias says was held at Messenia. The locals interpret it as an indicator of good fortune if a bull is able to make a column move. For this purpose the bull is bound to a pillar which is located on top of a tomb:

… ταῦρον ὄντινα ἐναγίζειν μέλλουσιν, ἀγαγόντες ἐπὶ τὸ μνῆμα ἔδησαν πρὸς τὸν ἑστηκότα ἐπὶ τῷ τάφῳ κίονα: ὁ δὲ ἄτε ἄγριος καὶ ἀήθης δεσμῶν οὐκ ἐθέλει μένειν: θορυβουμένῳ δέ οἱ καὶ σκιρτῶντι ἢν ὁ κίων κινηθῇ, Μεσσηνίοις ἐστὶν αἴσιον, οὐ κινηθέντος δὲ ἀσύμφορα ἐπαγγέλλει τὸ σημεῖον.

… The bull which is to be offered to the dead man is brought to the tomb and bound to the pillar which stands upon the grave. Being fierce and unused to bonds he will not stand; and if the pillar is moved by his struggles and bounds, it is a good omen to the Messenians, but if the pillar is not moved the sign portends misfortune.[97]

A bull is certainly able to exert greater power intentionally than a group of humans by accident, thus it has to be considered that the pillar at Messenia is of a greater firmness than the Boeotian. Thus it is likely that the funerary column of Orpheus in Boeotia was made of timber whilst the monument at Messenia was crafted from stone.

Intermediate Summary

According to the *Descriptions of Greece*, free-standing columns continued to be on show in the 2nd century AD. The majority of the columns were free-standing which shows that these were still in use for a variety of motives (table 2.2). Interpreting these columns as free-standing elements is certain; Pausanias' focus is on the dedication on their top which excludes the presence of an entablature. The variety of objects elevated by these supports is plenty, varying from large elements such as shields [VIII 11-8; IX 25-2] to birds [VIII 38-7], vessels [IX 30-7] and statues of gods [II 17-5; V 26-1; VIII 34-6] or famous people, for example Homer [X 24-2]. It becomes apparent that Pausanias' concern is to provide an illustration of Greece's historical events, rather than a detailed documentation of the monuments of this country.

[97] Pausanias, *Descriptions of Greece*: IV 32-3; Perseus online catalogue, English (1918).

Author	Building inc.	Freestanding Wood / probably Wood	Stone / Unknown
Pausanias	**I** 13-3 κιονας 'of a temple'	**II** 17-5 κίονος: Wooden Hera on pillar	**I** 18-8 κίονος: Statue on a pillar
	I 18-6 κιονων 'of a temple'	**III** 20-9 κίονες: Seven Pillars in ancient manner	**II** 19-7 κίονας: Undefined pillars 'hard by'
	I 40-1 κιονων 'of a fountain'	**V** 20-6 κίονα: Pillar of Oinomaios **VI** 18-7	**II** 25-5 στήλη: Figure of Lyrcus upon a slab.
	II 4 -5 κιονες 'surrounding spring'	**IX** 30-7 κίονι: Pillar with stone urn 30-10 containing the bones Orpheus	**III** 18-7 στήλης: Statue of Aenetus on a slab
	II 7-2 κιονας 'of a tomb'		**IV** 32-3 κίονα: Bull attached to a pillar.
	II 11-2 κιονες 'of a temple'		**V** 15-5 κίονι: Turning post of a Horse racing track
	II 17-3 κιονας sculptures above pillars, part of the tympanon		**V** 24-5 κίων: Pillar with statue on top
	III 11-3 κιονων 'a portico'		**V** 26-1 κίονι: Nike on a pillar
	V 10-3/5/10 περιστυλος temple of Olympia		**VIII** 11-6 στήλης: Likeness of Machaerion on a stele
	V 16-1 κιονες 'of a temple'		**VIII** 11-8 κίων: Pillar on a tomb bearing a shield on top
	V 20-6 κιονος pillars as part of a baldachin		**VIII** 30-10 πέριξ κίοσι: Columns surrounding sanctuary
	V 24-4 κίονα The first column of the temple		**VIII** 34-6 στήλης: Hermes on a stele
	VI 9-6 κίονα pillar that held up the roof		**VIII** 38-7 κίονες: Two columns on a peak with eagles on top
	VI 24-9 κιονες Tomb of Oxylus, roof supported by oak pillars		**VIII**44-2 κίονες: Pillars in a sanctuary
	VI 24-2/5 κιονες two Doric porticoes		**VIII** 45-5 κίονες: Ionic columns in front of a temple
	VIII 26-2 κίονες: Columns of a temple of Hera in ruins		**IX** 8-3 κιόνες: Columns in enclosure, no birds dare to sit on
	VIII 30-4 κίονες: of a temple		**IX** 25-2 κίων Pillar with a shield on top
	VIII 45-5 κιονων Doric and Corinthian columns of a modern temple		**X** 24-2 στήλη: Bronze statue of Homer on a stele
	X 5-2 κίονες: Building of Phocian delegates		

Table 2.2: columns, posts and pillars used in the *Descriptions of Greece* by Pausanias.

The term used to describe columnar elements in the *Descriptions of Greece* is less consistent than for the literature investigated previously. Pausanias mainly uses the term κιον for building integrated columns as well as for free-

standing posts. The term στήλη on the other hand seems to be linked specifically to free-standing objects; at no occasion is this term used to refer to a part of a building. κιον is generally accepted as a word for "column" consisting of a base, a shaft and a capital; it is used to describe columns of the Ionic, Doric and the Corinthian style [VIII 45-5]. In contrast to this term, the meaning of στήλη represents a larger variety of vertical markers. Despite this term being more flexible, Pausanias uses it on five occasions, all of which refer to a vertical element with a statue on top [II 25-5; III 18-7; VIII 11-6; VIII 34-6; X 24-2].[98]

***

[98] The support of a sculpture is not necessarily executed in the shape of a column, alternatives are: rectangular pillars, pedestals or plates.

Summary, chapter II

The literature investigated in this chapter charts the existence of free-standing columnar elements from the 8th century BC to the 2nd century AD. In fact, most columns mentioned in Greek texts are found in a free-standing context. Comparing the height of the element as it is used within its two different contexts exclusively from literary descriptions is not possible due to the scarce information offered. On the other hand, a comparison of the materials used is possible which allows for conjecture of the relative significance of columnar elements.

The materials described by the authors differ: whilst timber may generally be imputed for posts of old age, only two free-standing pillars are explicitly described to be made of this material (Homer and Pausanias). The *Iliad* also documents two options for the type of wood used in such constructions (either oak or pine). For most of the columns mentioned in the texts, stone is the most probable material of choice; however, precious and unusual materials such as gold, silver or bronze are cited (Hesiod and Herodotus). It remains in question whether literary descriptions relate to existing monuments in sanctuaries or palaces (more likely for the later authors such as Herodotus and Pausanias). They could also emanate from foreign architectural achievements, or even imagination (more probable for the older authors Hesiod and Homer).

In any case, the use of wood can be confirmed for at least some columns in a free-standing context, although there exists the issue of durability. This problem had already been recognised in antiquity as several ancient wooden components are either documented with traces of their weathering (Pausanias), or explicitly to be without such (Homer). The question of material can be furthered by turning to representations of free-standing columns in paintings of the 6th century BC. Their investigation follows in the next chapter with the focus on painting, an artistic medium that allows clear visualisation of this structural element which, according to the epics of Homer, was of legendary firmness.

Chapter III: Representation of Votive columns in antiquity

> "... there will be the time, when people realize that they [the paintings] are worth more than the money for the paint."
>
> Vincent van Gogh[1]

Greek artistic works combine the realms of mythology and the reality the artist lived in, as can be observed in both literature, and visual material. Any graphical product of antiquity has a documentary value that is worth far more than the value of its raw components, as suggested in Vincent van Gogh's quote. Due to the large number of painted reproductions those considered in this chapter are confined to the 6th century. The focus of this investigation are representations of columns in the leading painting style of this time, known as *Black-Figure*.

Representations of columns may reflect real-life use in antiquity, but they are not accurate reproductions.[2] They are however indicative of the kind of usage that would have actually occurred. Apart from columnar markers, trees are also represented as vertical markers; sacred enclosures frequently featured some object from nature, most often a tree.[3] As trees are also known from nature, they serve to highlight the question of artistic licence. Any two-dimensional representation answers to different preconditions compared to reality. As Nikolaus Himmelmann observes, their representation differs significantly from their natural form, yet despite the unnatural shape, the origin of the elements cannot be called into doubt.[4] For instance, trees are not only the object of worship; they are also

---

[1] Vincent van Gogh, Painter 30.03.1853 – 29.07.1890.

[2] On question marks over the fidelity of such representations see Eckhart (1953); Oliver-Smith (1969): 2-3; Oenbrink, Werner (1997): 19; Barletta (2001): 129. Some representations show implausibly slim poles, especially when combined with roofs of shallow pitch (and as such presumably tiled). Perhaps artists wished to gain space for the figural depictions.

[3] Morris, Ian (1999): 275.

[4] Amongst others, Himmelmann exemplifies this matter. He points out the un-natural reproduction of a grain stem, Himmelmann (2005): 54.

illustrated as bearers of dedications, either as the central element of the picture or as dedicatory elements amongst others within a sanctuary (Fig 3.1).[5]

Similarly despite the implausibility of some representations, the sacred importance of free-standing elements within a sanctuary is without question. The simple fact that they are often visualized indicates their significance. As is the case for many artforms, objects in paint are bound neither to structural requirements nor to the laws of nature. In particular, the sizes of the objects shown have to be adjusted to fit the requirements of each medium. As regards buildings, it likewise becomes apparent that columns in paintings do not follow the proportions of constructed columns and deviate significantly from the range attested archaeologically. Whether depicted on pottery, worked in relief on metal bowls or cut into seals and gems, many free-standing columns display proportions that would be implausible in reality for any constructional material. In fact, architectural representations on Greek vases show proportions of structures which imply the use of timber. Columns in particular are more widely spaced than that would be the norm for stone.[6]

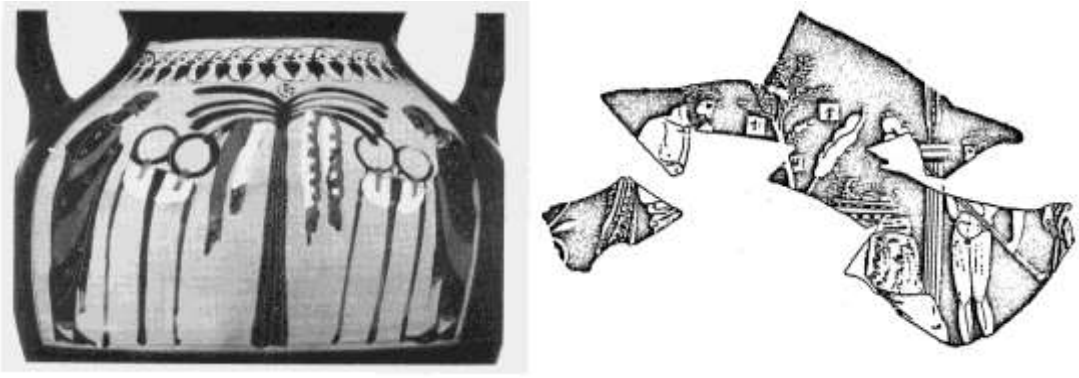


Fig. 3.1: Trees with dedications hanging in their branches.

[5] Himmelmann, Nikolaus (2005): The tree shown on the vessel is not only placed in the centre of the image, it is also flanked by two worshipers and two other important dedications of Greek custom, tripods, 47. Brulotte, Eric (1994): 318, fig 39. For the discussion on the importance of tripods in Greek culture see Wilson Jones (2002).

[6] For representations that evoke a timber construction see: Hittorff and Zanth (1870): 254-66, Pl. 81; Eckhart (1953); Oliver-Smith (1969): 20-24. For canopies and pavilions of light-weight construction see: Weber M. (1990): Taf. 33-5. A wooden shaft on a stone base is shown on a late seventh-century skyphos-krater Athens (NM, inv. 16384), see Eckhart (1953): 60; Oliver-Smith (1969): 75, no. 6, fig. 8; Howe (1985): 267, fig. 140; Hurwit (2000): 97, fig. 69.

In contrast to natural elements, the purpose of a column in paintings is not always clearly defined. Columns are shown both as part of a building or as individually erected free-standing columns. Since the focus in the past has been primarily on temples, the appearance of single columns had been generally interpreted as a substitution or shorthand for an entire building.[7] This might not necessarily be the case; after all, columns displaying a votive dedication on top were definitely free-standing. It is the presence of a sculpture or some other form of dedication that excludes the possibility of an entablature and thus makes a building integrated context impossible.

Fig. 3.2: Owls occupying the sanctuary of Athena next to a seated statue of Athena

[7] The difficulty of the interpretation of singular columns as representatives of buildings has already been mentioned in chapter I. Such interpretation is a possibility for the Greek context but has to be decided according to individual representations, a generalization for singular columns should be averted.

The variety of dedications on top of free-standing columns depicted in paintings exceeds the same in literature. Some dedications appear in both media, though there are certain differences. The appearance of animals in paint is more problematic than in literature. Herodotus makes mention of two gilded eagles; their material defines them as sculptures. Such information cannot be obtained from paintings; some of the animals shown could be living creatures. This can generally be assumed for animals depicted in motion, although there some exceptions. A group of three owls displayed on a *White-Ground Lekythos* (dated to the late 6th century BC) populate the scene. According to their non-sculptural arrangement it is assumed that the painted birds refer to owls living at the acropolis.[8] Due to the absence of any dedication or sculpture on top of the two columns shown, the context of the posts remains uncertain (Fig 3.2).[9] Even though the birds seem static, it depends on the scene depicted whether creatures can be interpreted as a reproduction of a sculpture or of an existing animal. Of course, this does not account for any scenes or settings referring to mythology; mythological beasts have to remain within their realm regardless of the quality of workmanship.

Another difficulty with paintings concerns the style of the capitals. As stated by John Boardman it is the shape of a capital that also relates to the nature of the dedication it delivered; an elongated design, as the body of a feline, therefore determines the combination with the Ionic style.[10] So far, no sculpture of a Sphinx has been found archaeologically on a column of any other style. Can this exclude any other capital style for this kind of dedication? It should be noted that there are plenty of representations of birds found positioned on columns of both Ionic and Doric style, despite the small area covered by their feet. Thus there is no strict linkage between columnar style and kind of creature supported.

[8] Neils, Jennifer (1992): cat 7.

[9] Neils suggests that the two Doric columns on the vessel indicate a building.

[10] Concluding from Boardman's hypothesis Segal assumes that "sphinxes are always set up on ionic columns", 6. Additional support can be observed at the existing artefacts from antiquity by which surviving sphinxes are solely combined with Ionic column capitals. However, the amount of remaining artefacts is so little that the number cannot be seen as representative regarding the erection of this sculpture. Boardman, John (1959): 205-206; Segal, Phoebe (2010).

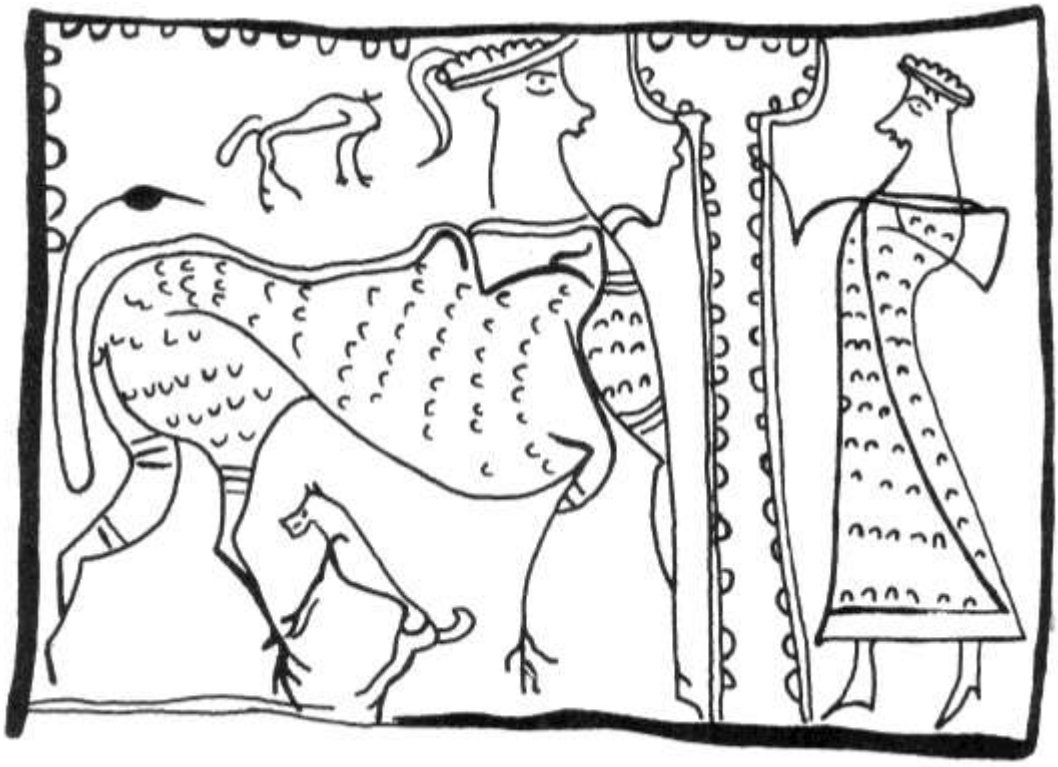


Fig. 3.3: A Ker and a worshipper next to a singular column.

Sphinx, a creature of Mythology

The Sphinx, the vicious feline, has a personal connection with free-standing columns.[11] As a creature of mythological origin, the representation of felines varies; they are not necessarily hostile and not always associated with Sphinx (of Thebes), felines in this context should be addressed as Ker. However, whether such a creature has to be addressed as a Sphinx or as a Ker is not the concern of this investigation – in order to simplify the matter the word Sphinx is used for this dissertation in general.[12] The representation of Sphinxes dates to the Mycenaean period, a Larnax from Thebes dated to the 13th century BC, shows such a friendly creature next to a singular column (Fig 3.3).[13] As the frieze shows the feline is not necessarily placed on top of a column alternative solutions are possible and especially during the Geometric period felines are shown as part of

[11] According to the myth she sits on a column outside of Thebes. From this raised surface she leaps down in order to prey on travellers.

[12] For the discussion whether a winged feline has to be addressed as a Sphinx or as a Ker see Vollkommer, Rainer (1991): 60 – 63, Walter, Hans (1960): 67.

[13] The panel is not providing enough detail to certainly allocate this column to a free-standing context. Rutkowski, Bogdan (1981): abb. 15; Aravatinos, Vassilios (2010):121-123.

processions or alongside warriors.[14] From at least the 6th century BC onwards, winged felines appear as the crowning element on top of free-standing columns.

One of the earliest representations of (a paired) Sphinx on a *Black-Figure amphora* dates to the middle of the 6th century BC.[15] The central image on the obverse of the vessel shows Heracles wrestling the Nemean Lion flanked by two free-standing columns, each of which elevates a Sphinx (Fig 3.4).[16] Both felines are seated and looking at Heracles at the centre of the scene. The two columns are displayed as (very) slender and of equal proportion and height, the only significant difference between the two posts being the capital terminating the shaft. The post on the left side displays a voluted capital, but not necessarily to an Ionic. The slight recess between the volutes indicates the Aeolic style, even though this would be rather unusual in combination with a sphinx. The major distinguishing feature of Ionic is the *canalis*, the horizontal linking of the two volutes, but this is hardly visible since this part is largely covered by the *abacus* on which the Sphinx is resting. In contrast to the left side, the support on the right side has an unmistakably Doric capital. The artist painted: two white lines or *anuli* below the bulbous *echinus*,

Fig. 3.4: Heracles between two Sphinxes on columns of two different styles.

[14] Apart from the representation of a winged feline on her feet, it is also common to locate her on a rock. Such a representation is more likely to refer to the sphinx of Thebes, Walter, Hans (1960): Abb. 33 and 38. For this creature taking part in processions see: Papastamos, Dimitrios (1970); Boardman, John (1998); Beazely, J. D. (1951).

[15] Neils, Jenifer (1992): cat. 20, 550-540 BC; Segal, Phoebe (2010): 575-525 BC.

[16] Segal, Phoebe (2010): cat. 106, Neils, Jenifer (1992): cat. 20.

leaving no doubt as to this interpretation. The absence of a base for a voluted column, reduces the post's distinguishing stylistic features solely to its capital. Thus while Aeolic and Doric columns were unusual for supporting Sphinxes according to archaeological remains, both styles appear occasionally for this purpose in paint.[17]

A Doric column elevating the sculpture of a feline might seem unusual at first, but this combination is not an isolated pictorial occurrence. The same arrangement of a central image between two columns is depicted on a *Black-Figure Neck-amphora* which dates to the same period as the vessel previously mentioned. The reverse of the vessel shows a man standing between two Doric columns and playing the kithara (Fig. 3.5).[18] These two depicted columns also share the same characteristics as the aforementioned Doric post, including a winged feline on top of each capital. Both capitals are shown with a bulbous *echinus*, significantly protruding the shaft. Both shafts are terminated by fine white lines indicating the *anuli* and forming the transmission to the capital. The shafts also display a disproportionate slenderness and a significant or heavy *abacus*, upon which the Sphinx rests. This *abacus* stretches as far as the feet of the feline, which perfectly fit the available space. The creatures are shown seated, their chests face the kitharist but their heads turn away over their

Fig. 3.5: Reverse of a Neck-amphora displaying a kitharist between two Doric columns.

[17] Sphinx of Thebes, definitely placed on an Aeolic post, can be observed on a *Red-Figure Pelike*, Walter, Hans (1960): Abb. 35. The representation of the support betrays a high level of detail as the shaft also displays flutes and a square base. Due to its date into the 5th century BC, this representation of a winged feline is not included in this investigation, despite the definite identification of an Aeolic styled column.

[18] Segal (2010): cat. 105; Neils, Jenifer (1992): 66, fig. 42b; British Museum, London B 260.

shoulders, looking to the opposite direction. In contrast to the myth of Sphinx, neither of the depicted felines is particularly frightening. Both are shown stationary and nothing suggests a vicious predator shooting off its post any moment in an attempt to savage its prey. In fact, the felines depicted seem almost as if they are reproductions of sculptures, made of stone or bronze, placed on a free-standing column within a public space or a sanctuary.

The opposite can be proposed for such a creature shown atop a Doric column on a fragment of a *Hydria* (Fig. 3.6).[19] This vessel is dated towards the last quarter of the 6th century BC and shows a line of men, possibly travellers or warriors, passing the column with the feline on top.[20] The column elevates the Sphinx above their heads on a capital which is mainly characterized by a largely protruding *abacus*. The capital seems to be of the Doric style as the presence of a shallow *echinus* can be identified below this *abacus*. Unfortunately, the vessel is highly fragmented; the shard is not only damaged at this position, obscuring further details of the capital's execution, but the entire lower half of the column is lost.[21] Even though the column is incomplete, the surviving upper half of the shard gives the impression of a slender shaft. Sphinx herself is depicted in a moment of motion; a paw stretches forward, leaving the *abacus* of the capital. This sudden movement surprises the next person about to pass the post; his head turns towards the creature on the column. According to the myth, this situation was feared by travellers since it refers to Sphinx of Thebes, the most famous of all winged felines. It was she who terrorized the region until Oedipus liberated it and became king.[22] The story visualized on the *Hydria* refers to this myth by showing Sphinx as the crowning element on top of a Doric post.

[19] The vessel belongs to the Heribert A. Cahn collection and is dated to 520/510 BC. Vollkommer, Rainer (1991): tafel 3; Moret, Jean Marc (1984): Taf 23.

[20] Vollkommer, Rainer (1991): 60.

[21] In fact, the status of preservation of the *Hydria* is very poor. The right part of the capital is broken therefore the extent of the representation is not certain. This uncertainty is amplified with the missing rear of sphinx as she is leaving the capital. Noticeable is the verticality of the *echinus*, which protrudes insignificantly, but this might be due to the joining of the shards. The representation of this *echinus* is less bulbous compared to the previous columns of the Doric style.

[22] Sophocles, *King Oedipus.*

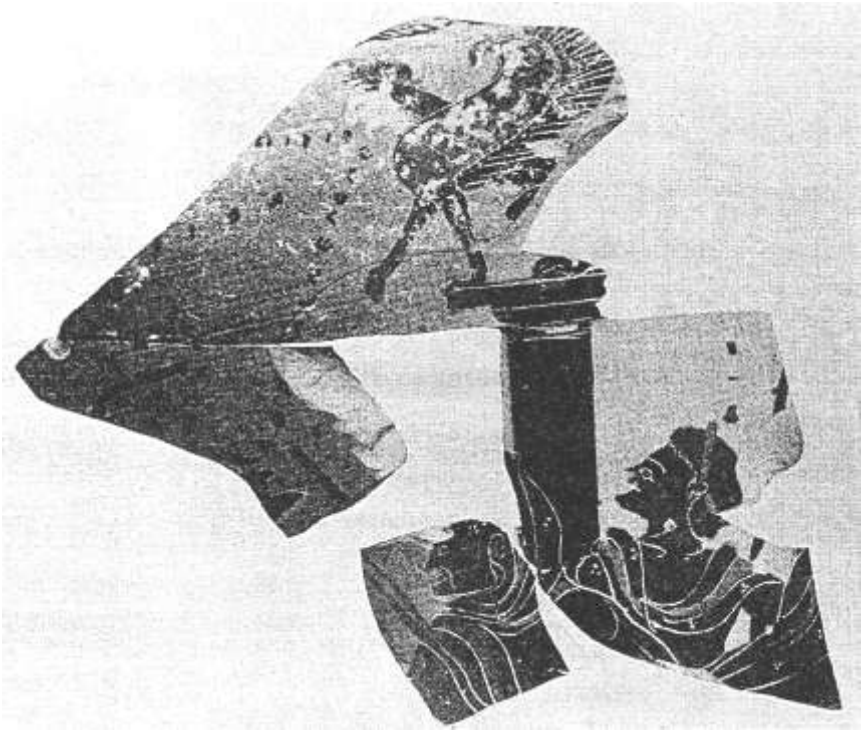


Fig. 3.6: Sphinx depicted in motion on a Doric capital, Hydria – Basel.

The representation of a column on a *Lekythos* from Taranto belongs to the group of supports whose nature cannot be clearly identified (Fig. 3.7).[23] The scene shows Sphinx of Thebes in conversation with a person who is carrying a spear, indicating him as a warrior.[24] Sphinx faces him just above eye-level on a relatively low support. The support is different to the others previously mentioned; it appears compact, not slender at all and terminates in a large *abacus*. This *abacus* is significantly larger than necessary for the feline's feet to rest on. Her feet only match the extents of the post underneath the *abacus*. Aside from this unusual appearance, the support is drawn in great detail. The free-standing monument lacks a base, but two rectangular slabs at the bottom indicate the presence of a *stylobate* which elevates the entire pillar. The shaft lacks a defined capital but the vertical element is terminated by some kind of bead, or *egg-and-dart* ornament.[25] The absence of a volute capital implies a Doric influence,

[23] Walter, Hans (1960): Abb. 37.

[24] Vollkommer, Rainer (1991): 61.

[25] Capitals, associated to the Doric style, decorated with lobes, foliate or egg-and-dart ornament are known to both structural contexts investigated. For an example; this shaft termination has been suggested for the columns on the inside the *peristasis* of the Artemision at Ephesos:

Fig. 3.7: Sphinx on a lobed capital of a pedestal (?), facing a traveller.

although this support is not necessarily referring to a column. Due to the two-dimensionality of the picture, this could also refer to a rectangular pedestal. In this case, the decoration of the elevating element is not a circular arrangement and refers to the *egg-and-dart* of the Ionic *cymatium*. Interpreting the support as pedestal instead of a column explains visual stoutness. The structural characteristics of a support illustrated should not – of course – be overestimated. As this vessel shows, the scene is limited to the boundaries of the paintable surface. Elevating the feline above eye-level on top of a shaft creates plenty of space below the feline and also plenty of space above the head of her contender. It is clear that representations have to be interpreted differently regarding structural necessities than those of archaeological artefacts, regardless of whether the support described refers to a reduced Doric column (tailored to the paintable area) or to a low pedestal.

Possibly the best known representation of Sphinx and Oedipus together can be seen on a vessel kept at the Vatican (Fig. 3.8).[26] This bowl of the *Red-Figure* painting style dates to the 5th century BC and therefore does not strictly belong in this investigation; however, due to its prominence this representation should not be left out. The scene depicts the crucial moment between the two opponents, the moment of the famous riddle. Sphinx, the taller of the two, is pictured in the centre of the circular painting surface and Oedipus is seated on the

Ohnesorg, Aenne (2007): Tafel 38-39; for the columns in *antis* of the fourth temple of Demeter at Sangri: Gruben, Gottfried (1997): 263; and a similar ornament can be observed above the heads of the Caryatids at the Erechtheion, which are referred to as being Doric: Durm, Josef (1881): 177.

[26] Vatican, Musei Vaticani 16541.

left. From on top of the tall column, Sphinx is looking down at Oedipus who returns the glance. The circular field is ideal for this representation since it allows the feline to be taller than Oedipus as she occupies the centre. Oedipus fills the space on the left, while the right side is taken up by a floral motif, a pattern commonly used to fill empty spaces.[27] The style of the capital is Ionic, as the two volutes are linked by a horizontal *canalis*. The *abacus* on top of the volutes is of regular size and, apart from being just large enough for her feet, is decorated with a meander pattern. Aside from the base missing at the bottom, this representation seems to refer to a canonical column of the Ionic 'order'.[28]

Fig. 3.8: Oedipus disputing with Sphinx, *Red-Figure* bowl Vatican.

[27] Rigl, Alois (1893): Kapitel 1, 24.

[28] An alternative explanation for the rectangular pedestal would be a column base, required for the stability of a free-standing column. The compact appearance of the marker and the double tiered appearance of the *stylobate* do not support such a theory.

As can be concluded, representations of Sphinx are not exclusively associated with the Ionic style as suggested by Boardman. Despite the elongated positioning of her feet, representations on vessels of the 6th century BC display a greater flexibility of styles used for the columns supporting this feline. Supports include pedestals of an uncertain style, as well as the unfamiliar combination of capitals with a square plan (Doric) and even capitals without a clear definition of the outline for their upper surface (Aeolic).[29]

Fig. 3.9: Living animals as part of the scene depicted, in wildlife (a) and as sacrifice (b)

Representations of creatures as dedications on columnar offerings

Aside from mythological beasts, terrestrial animals also found themselves represented in the paintings of the 6th century BC. The reason for their representation varies – animals are shown either to furnish a scene (Fig. 3.9) or as a dedication on top of a free-standing column (Fig. 3.10). The variety of creatures displayed on free-standing columns is enormous. The range reaches from smaller animals such as birds to large animals such as lions or panthers. Even humanoids have been found on top of free-standing columns, although the appearance on *Black-Figure Panathenian amphorae* has to be considered a later feature.[30] This

[29] The upper surface area of Aeolic capitals varies significantly. Capitals with negligible upper surface areas are known as for the free-standing column capital from Larisa: Betancourt, Philip (1977): 75, Pl. 42, 44, as well as elongated capitals as for the free-standing columns capital from Athens: Betancourt, Philip (1977): 102, Pl. 53-55, Pl 59. Similar has to be suggested for Aeolic capitals in a building integrated context.

[30] The representation of humanoids, as crowning element of columns depicted on *Panathenian amphorae,* cannot be dated before the 5th century BC. For the periods before the 5th century BC are paired, facing cocks the canonical creature on top of the architectural element. The replacement of cocks with statues, as depicted on *Panathenian amphorae,* has to be considered as a change of fashion towards the end of the 5th century BC. This observation solely accounts

section investigates the appearance of animals on free-standing columns and the scenes which they take part in.

Fig. 3.10: Free-standing column supporting a commiserating lion

The Sphinx is not the only beast to have been depicted in a moment of motion on top of a column, movement can also be suggested for a lion on a *Lekythos* from Athens (Fig. 3.10).[31] The feline stretches its paw towards a female but in a gesture of commiseration instead of aggression, as is supposed for Sphinx. The representations of felines were a regular feature within a funerary context; as Gerhard Rodenwaldt states, "Lions … Sphinxes and Griffins protected tombs of antiquity from the seventh century onwards".[32] The scene confirms that this feline has a guarding function as a protector of the deceased. Similar to Sphinxes, lions require an elongated surface for their support, a design exclusive to the Ionic style. In contrast to this assumption, the feline is depicted on a Doric styled post. In fact, the post betrays several Doric characteristics; the shaft is un-fluted and has a marked taper. After the rare use of a primitive meander as a *hypotrachelium*, the shaft continues into a shallow *echinus* which displays a lobed decoration. Also characteristic for the Doric style is the absence of a base, but this detail of the support cannot be ascertained due to the sumptuous acanthus plant at its bottom. Being pictorial, the nature of the support cannot be defined. As with the support

for the iconography of *Panathenaian amphorae*, humanoids represented on other vessels and other media of art can be confirmed for the 6th century BC: Valvanis, Panos D. (1987): 467-480.

[31] Wesenberg, Burkhardt (1994): Abb. 2.

[32] Rodenwaldt, Gerhard (1938): "Löwen und mächtige Ungeheuer, Sphingen und Greifen haben antike Graber behütet vom siebenten Jahrhundert vor Christus an ein Jahrtausend hindurch, bis sie am Ende der Antike von der christlichen Heilssymbolik abgelöst wurden." 9.

for the aforementioned Sphinx, this support may refer to a pedestal. In contrast to the previous example, this support is more slender and the taper suggests the use of a column. The representation of a lion in a funerary context draws a parallel to a sculpture of a lion discovered in Korkyra, Corfu. This sculpture is also associated with a funerary context, and according to Rodenwaldt was presented at a similar height.[33] In comparison to the representation on the *Lekythos*, and in spite of its elongated body, this sculpture may have been placed on a Doric column. The combination appears unfamiliar indeed, but a recent archaeological find confirms the combination of an elongated dedication with the square *abacus* of the support.[34]

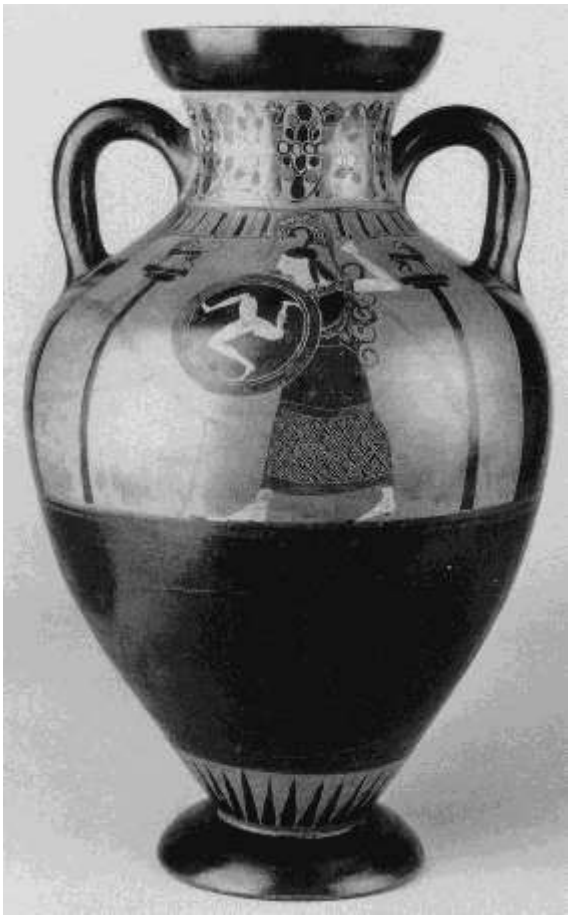


Fig. 3.11: Image of a striding Athena between two Doric columns.

Two supports for felines shown on a *Panathenaic-shape amphora*, dated about 540 BC, resemble the Doric style as these are flanking the image of a heavily armed Athena (Fig. 3.11).[35] A noticeable characteristic of this type is the incredible slenderness the two shafts; in fact, the posts are too slender for real

[33] Rodenwaldt, Gerhard (1938): Rodenwaldt suggests that the lion was located "Next to the road, placed on a support, about as high as the eyelevel of the beholder…" - "Neben dem Wege, auf einem Unterbau, etwa so hoch, dass die Oberseite auf Augenhöhe des Betrachters war…", 8.

[34] A Doric capital, with feline's feet has been found at Korakou, near Corinth. This capital has recently brought into connection with the sculpture of a lion that matches in proportion and is to be published by Nancy Bookidis. For information on the Archaic columns of Corinth see: Pfaff, Christopher (2003).

[35] Neils, Jenifer (1992): fig. 51a. The Board of Trustees of the National Museum and Galleries on Mersevside, Liverpool, 56.19.18

free-standing examples. Nevertheless, the two capitals are represented by largely protruding, heavy *echinoi* topped by an elongated *abacus* with felines standing on top. Both creatures turn their heads over their back to face the Goddess in the centre of the image. All three individuals do not display movement and it is possible that they refer to existing sculptures.

According to Jenifer Neils, the iconography used on *Panathenaic amphorae* refers to an existing cult statue which is flanked by two columns that "might have had some role in the festival".[36] Such an interpretation suggests that the two columns also portray existing columns.[37] As plausible as it seems, from this interpretation it follows that the two columns are likely to have been copies of two specific columns at a specific sanctuary. Thus Doric votive columns carrying felines have to be considered a genuine possibility. It is general consensus that *Panathenaic amphorae* were created for the award given at the Panathenean games. Neil's statement refers to the location of the sanctuary of Athena, at which copious columnar dedications can be verified for the 6th century BC.[38] The ensemble depicted is impossible to locate archaeologically; it might be that the iconography simply reflects the amount of columnar dedications during the 6th century BC, rather than a specific pair of columns.[39] Less ambiguous is the artist's intention to depict free-standing columns – none of these can be interpreted as

[36] Neils argues that the repeated representation of Athena in the same pose refers to an existing statue at the acropolis. According to her the original statue, as master for the paintings, is a statue placed outside the building rather than the: "sacrosanct cult statue of Athena Polias, housed in the temple on the north side of the Akropolis […] as the source of the Panathenaic Athena": Neils, Jenifer (1992): 36-37.

[37] Phoebe Segal states in her dissertation, that not only the dedications on top of a columnar monument but the entire column "represent *anathemata*". Segal, Phoebe (2010): 61. A similar parallel has been made in the 19th century by Karl Bötticher, who addresses the entire temple as offering. Bötticher (1851): introduction 20.

[38] For 6th century BC, columnar votive dedications made of stone at the sanctuary of Athena at Athens see: Kissas, Konstantinos (2000) and Raubitschek, Anton E. (1949). The amount of surviving fragments is exceptional at this sanctuary but only reflects dedications made of this durable material, of the amount of non-durable dedications can only be speculated.

[39] Neils states that until today no posts have been identified fitting this purpose: Neils, Jenifer (1992): 37. Due to the age and the state of the sanctuary it is very unlikely that a pair of columns will be identified to this purpose. The uncertainty in which Neils puts it seems best to deal with this problem.

surrogate for a building.[40] The symbol of paired free-standing columns was consciously chosen by the artist or commissioned by the games' committee, not only underlining the importance of this element within the sacred environment but also indicating their use in sanctuaries during the Archaic period.

The most common representations of free-standing columns are on *Panathenaic amphora* (Fig. 3.12).[41] For this vessel, cockerels became the canonical creature on top of two Doric posts, as this bird symbolizes the competitive spirit.[42] The imagery displayed on the amphorae became standardized from the second half of the 6th century BC onwards and was repeated with marginal changes since.[43] Athena flanked by two Doric columns indicated the vessel was an award won at the games and therefore honoured the owner.[44] In

[40] Not only that such a context can be excluded to the representation of the animals on top of the capitals, paintings of a deity within a temple or shrine dating to this period exist. An artist intending to display a goddess inside the shelter of a building would probably have chosen this option. An amphora, dated similar to the *Panathenaic amphorae*, shows a shrine with Apollo in between two Aeolic posts: Wesenberg, Burkhardt (1971): cat. 175. This shrine may refer to an authentic situation of antiquity as several buildings with Aeolic capitals can be confirmed: Betancourt, Philipp (1977): PL.: 2, 6, 12, 13, 18, 39-40, 45, 63, 64, 66, 68, 69. On top of the known fragments within structural integrated context are several fragments of an uncertain structural context and some of them may also have been included in the context of a building.

[41] Bentz, Martin (1998): cat. 6.014. This vessel is dated to 540 BC, according to Martin Bentz, a period at which the *Panathenaic* iconography was already standardized. Similar representations are: Bentz, Martin (1998): cat. 6.050, 6.072, 6.088, 6.089, 6.133. Beazeley, J. D. (1951): PL 45 (2), 46 (2), 49 (1). Neils, Jenifer (1992): Fig. 20. Variations to the appearance of cocks can be found in: Valvanis, Panos D. (1987): 470; Bentz, Martin (1998): 53-57. Beazeley, J. D. (1951): PL 46 (3).

[42] As Bentz states that the cocks of the *Panathenaic amphora* represent the cock-fight and have to be seen therefore as symbol for contest and valour; "Die Hähne der Preisamphoren werden von der Forschung, insbesondere wegen ihrer Zweizahl, als Anspielung auf den vielpraktizierten Hahnenkampf und somit als Symbole für Kampf und Mut angesehen". Bentz, Martin (1998): 52-53.

[43] As an event held at Athens it is assumed that the games were a local, non-Pan-Hellenic game. After a certain reorganisation, attributed to the reign of Peisistratos and the years of 570-560 BC, the games received a national reputation and this peculiar amphora with its iconography became the standardised award of the victors. Shapiro, H.A. (1989): 19. However, Bentz prefers a date of 530 BC for the stabilisation of the iconography. This date is of certain significance for the sanctuary of Athena at Athens as at least one monumental Ionic votive column can be confirmed at the *acropolis*. Shapiro, H.A. (1989): 19; Bentz, Martin (1998): 16. For information about the monumental Ionic column see: Korres, Manolis (1997).

[44] Not only the iconography became standardised, each amphora also contains a characteristic inscription: TON AΘENEΘEN AΘΛON - marking the vessel as a trophy given out at the Athenian games. Bentz, Martin (1998): 41/57.

combination with the iconography, these amphorae were also of value due to their size and thus the amount of oil they contained, up to 40 litres.[45] The columns are commonly of the Doric style; it is only at the end of the 6th century BC that Ionic capitals start to appear sporadically, still bearing the characteristic pair of cocks.[46] Disregarding the capital, the representation of the columns have several aspects in common – all posts are represented very slender and none of them displays a base. The majority of the Doric posts also show a pair of white lines at the upper end of the shaft, indicating the *anuli*.

Fig. 3.12: *Panathenaic amphora*, displaying Athena between two Doric columns.

A free-standing Doric column is shown as part of a scene of Prometheus' punishment (Fig. 3.13).[47] The Titan is bound to this pillar on the right side of a cup's surface by "inextricable bonds", similarly to the scene described by Hesiod in the *Theogony*.[48] This illustration shows that the Greek term κίον to describe the marker, as used by Hesiod in the 8th century BC, can be understood as a reference to a free-standing column during the Archaic period when the painting was made. This is clear on account of the crowning bird. Prometheus is not the only humanoid shown on the cup: the left side represents another Titan: Atlas. As with the fate of Prometheus, Atlas as support of the heavens, is also part of the

[45] In fact, the volume varies marginally, most *Panathenaic amphora* keep an average of 38 -39 litres with a maximum of nearly 40 litres. Neils, Jenifer (1992): 39.

[46] Doric is the preferred style of free-standing columns depicted on *Panathenaic amphorae* of the 6th century BC. Bentz, Martin (1998): 52, for variations see cat. 6.088, 6.133, 6.137.

[47] Stibbe, C.M. (1972): 109, taf. 63.

[48] As given in the passage in chapter II; Hesiod, Theogony 521-522.

Theogony of Hesiod.[49] The *Black-Figure* cup from Laconia dates to 560 BC and the representation on the right in particular seems to be an accurate depiction of a built Doric column. Not only are the proportions consistent but the shaft also displays vertical lines, indicating fluting. The taper of the shaft is characteristic and the top shows two sets of four horizontal lines, of which at least the upper set can be interpreted as *anuli*. The second set is not a regular feature of the Doric style, but it has to be assumed that there was some variety in the execution of real columns, especially in the context of free-standing dedications. A circular arc represents the *echinus* which is then topped by a large *abacus*. The bird mentioned sits on top of this *abacus* and just fits the space behind Prometheus. In fact, the bird has little space and appears squeezed into the area provided; on the other hand, the snake behind Atlas on the left appears to be inserted in order to fill empty space but it is the presence of this bird which excludes the column as a surrogate for an entire building.

Fig. 3.13: Prometheus (right) bound to a Doric column.

[49] Hesiod, *Theogony* 517-519.

At the bottom of the picture, at the Titan's feet, the vessel displays a second Doric capital as part of a column. Only the upper section of this column is shown, but there are several similarities with the capital behind Prometheus' back. Enough of the shaft is painted to indicate tapering and to display the vertical lines of the flutes. Below the *echinus* are *anuli* and vertical lines, and a large *abacus* crowns the entire architectural component. This column can be seen as a support for the scene of the two Titans. Yet considering the free-standing character of the column behind Prometheus, the large capital at their feet may also in a free-standing context.

The required area for the feet of a bird is square rather than elongated, which favours the use of a Doric capital, nonetheless though, Ionic capitals can also be found elevating birds. An example of this combination can be seen on a jar that dates to the middle of the 6th century BC, and was probably crafted in northern Ionia but discovered at Thebes, Egypt (Fig. 3.14).[50] This location suggests that the vessel was an object of trade, and might even have been commissioned by an Egyptian since the neck of the vessel displays the cartouche of the Egyptian ruler Apries (589/570 BC). The column shown is undoubtedly Ionic.[51] The large volutes of the capital protrude sideways and terminate after curling inwards about 1¾ times. Another characteristic of the Ionic style can be interpreted from thin vertical lines below the linked *canalis*, which may refer to the lobes of the Ionic *echinus*. Thus birds are not restricted to a specific style of the capital, at least on *Black-Figure* vessels of the 6th century BC.

[50] BM vessel, on loan from the collection of Herbert Cahn (HC 1175) and the Petrie Museum, UCL (UC30035a-b) in; Boardman, John (1998): 158, fig. 306.

[51] Not only the bottom of the shaft displays a base (in the form of a primitive disc or torus) also the link of the *canalis* is clearly drawn by the artist. The use of a column bases can be confirmed for several cultures prior to the Geeks each with their own variation in shape and ornament. A simple torus however, is a design which can be found frequently in art (fig. 1.10) and in archaeology for almost every culture neighbouring the mediterranean. For the variations on the design of column bases and their capitals see: Wesenberg, Burkhardt (1971).

Fig. 3.14: A jar discovered in Egypt decorated with a bird on top of a free-standing column.

It becomes clear that the area covered by a creatures feet does not determine the style of the capital. This is also the case for the relatively small proportion of a birds feet. Figure 3.14 displays a bird in large and elongated pose that seems to go well with the Ionic style; although so too are the cocks on figure 3.12 and on figure 3.15b/c, crowning columns capped by Doric capitals. The other extreme can be seen on a *Panathenaic shape* amphora in figure 3.15a.[52] The two birds are tiny; their bodies hardly exceed the height of the Doric capitals on which they are depicted. The lack of elegance of the owls matches the lack of elegance of the free-standing columns capitals. Instead of Doric *echinoi*, the shafts are

[52] This vessel only resembles the shape of *Panatenaic amphorae*, hence it is called amphora of *Panathenaic shape.* Apart from the design of this amphora not matching the iconography, the vessel is also missing the characteristic inscriptions this concurs with a difference in size, which is probably the most significant deviation to *Panatenaic amphorae:* it only measures 27.5 cm in height. Neils, Jenifer (1992): 154-155, cat.17.

terminated by dark, bulging shapes, followed by massive *abaci* which are equally as tall. The capitals drawn are of unfamiliar shape, but the intention of the artist to depict the Doric style can be observed. The representation of the architectural component is limited by the artist skill. Considering that the choice of capital was a decorative element for the artist (which may also be connected to the artist personal heritage), these are not indebted to any artistic convention in architecture. But, by following the unusual reproduction of combinations of creatures and capitals in paint, a similar flexibility might seem appropriate for columnar markers of construction.

Fig. 3.15: a) Athena between two Doric columns crowned by owls. b) Athena in front of a Doric style column with a large cock.

Animals depicted on pottery of the 6th century BC are shown on top of a variation of styles of column. It has to be concluded that there is no correlation between the style of the capital and the size and outline of the animal. Animals with paired feet, as well as elongated felines, are depicted on various different shapes of capitals, showing a greater tolerance for the use of the 'orders' than assumed by architectural standards. In paintings, the reproduction of creatures cannot be exclusively associated with any specific style of column.

The representation of objects

Free-standing columns also supported vessels and shields. In addition some free-standing markers are shown without a dedication - even without a capital. As mentioned at the beginning of this chapter, it is uncertain whether columns without a dedication on top should be seen as free-standing or as surrogates of a structure. In order to solve this matter clues are provided by their environment; columns representing turning posts in sporting events would certainly have been free-standing. When attributed to this purpose they appear frequently on vessels depicting competitions in fields such as running, horse and chariot races, and all of these required a turning post. The turning post of the chariot race is of particular interest, since such events were held at Olympia since 680 BC.[53] Chariot races are even older, for Homer describes a turning post in

Fig. 3.16: Reverse of *Panathenaic amphorae* with vertical markers used a turning post for competitions. a) horse race, b) running competition.

[53] The chariot race, followed by the horse race (about 648 BC), is one of the oldest competitions known taking place at the games of Olympia in the need of a turning post. As a competition of the 7th century BC, archaeological evidence suggesting horse races at the sanctuary of Apollo at Thermos predate findings from Olympia. Bentz, M. (1998): 76; Papapostolou, I. A. (2010): 56.

the *Iliad*.[54] Despite the literary and iconographical evidence for the Archaic period, the archaeological evidence is poor; Elizabeth McGowan states that "no surviving monuments have been identified as the turning posts of racecourses of the sixth or fifth century BC".[55]

However, several turning posts can be found on the reverse of *Panathenian amphorae.* These posts are either shown as a simple marker (Fig. 3.16a), or as complete column with a capital terminating the shaft (Fig. 3.16b).[56] The turning of the competitors is a thrilling moment of the race, and thus a scene with a lot of dramatic promise. The *Iliad* describes Nestor's advice to his son Antilochos regarding how to turn most efficiently in order to gain an advantage during the race. He explicitly advises to avoid hurting the horses or to damage the carriage at the lithic base of the post.[57] Many pictorial reproductions of the vertical markers depict free-standing columns without a base, but this does not necessarily exclude the component from construction. The absence of a base seems more likely for rustic posts, which must have been forced firmly into the ground, but this is a less satisfactory solution for a marker in a stadium. Bases can indeed be found occasionally in paintings. On the rare occasions, this element is shown, it is not necessarily tied to architectural convention –figure 3.16a displays such an element with a trapezoidal shape

Painted free-standing columns are not bound to follow the proportions of real columns. A turning post of more compact proportions rather than slender can be seen on a *Black-Figure* amphora dated to the middle of the 6th century BC and so slightly predating *Panathenian amphorae* (Fig. 3.17).[58] The dangers of a chariot race as delineated by Homer can be seen on this vessel. McGowan describes the scene thus: "a horse has fallen and a man who has been thrown from

[54] Bentz, Martin (1998): 63.
[55] McGowan, Elisabeth (1995): 624.
[56] Bentz, Martin (1998): cat: 6.062, 6.097, 6.104. Beazeley, J. D. (1951): plate 44 1. McGowan, Elisabeth (1995): 624, Fig 6.
[57] Homer *Iliad* 23.338-341.
[58] Carpenter, T.H. (1983): 279-93; McGowan, Elisabeth (1995): 622, fig. 3. For the discussion see footnote 53.

his own chariot is crushed by the wheels of his opponent's".[59] The scene shows that the turning post is painted in front of a spectator stand, indicating the importance and the excitement of the moment of the turning. The style of the column depicted cannot be defined – the shaft is fat and hardly inclining, and the crowning element of the shaft is more bulbous than of the shape of an *echinus.* This marker could be a stele or pot-stand instead of a column with a crowning capital.[60] In this case, the bulbous termination of the shaft refers to the marker's dedication and not to a capital, extending the variety of free-standing pillar designs - at least for their reproduction in paint.

Fig. 3.17: Irregular shaped turning marker on a vessel dating to the middle of the 6th century BC.

[59] McGowan, Elizabeth (1995): 624.

[60] McGowan suggests that the term κίον and στήλη are interchangeable. Her statement is based on Pindar (a poet of the 5th century BC), who used both terms for both structural contexts. Whether such implication applies to the 6th century BC remains debatable, the investigation of Greek literature in chapter 2 cannot confirm McGowan's statement for this period. McGowan, Elisabeth (1995): 623.

Fig. 3.18: Pot on Votive column as part of a sanctuary.

As mentioned, the style of free-standing posts seems generally to be more flexible in paintings than in reality. A bowl from the British Museum depicts a procession towards an altar and a statue. Behind the statue, a free-standing post is drawn with a large pot on top (Fig. 3.18).[61] The shaft terminates with two small horizontal stripes, in combination with the visible tapering of the shaft; the lower of these two could be interpreted as a very small *echinus* with the upper as an *abacus*, a solution which implies that the post is in the Doric style, though this cannot be ascertained due to the miniscule scale of the representation. What is certain is that the column is free-standing due to the large pot on top. The presence of such columns in scenes relating to sanctuaries and/or processions highlights their sacral importance. In fact, here the artist preferred to represent a dedicatory post instead of part of a building, evidently because free-standing columns were common in sanctuaries. By contrast, the representation of temples remains relatively rare on vessels of the Archaic period.[62]

[61] van Straten (1995): fig. 14. London, British Museum B 80 [V107].

[62] In contrast to free-standing columns, especially if crafted from timber, the presence of buildings of the Archaic period can be confirmed archaeologically, by their foundations. Nevertheless,

Pots regularly crown free-standing columns, the style of which seems to be irrelevant.[63] Doric supports can be seen on the obverse of a *Panathenaic-shaped amphora* dating to approximately 530 BC (Fig. 3.19).[64] The picture shows a striding Athena flanked by two Doric columns, but instead of cocks the columns elevate large vessels. These columns display largely protruding *echinoi*, a very shallow *abacus* and *anuli*. Similar flexibility of style is visible on a sarcophagus from Clazomenae. This vessel dates to the very end of the 6th century BC and it shows a column of the Aeolic style (Fig. 3.20).[65] The column displays several regular characteristics of this design as the bulging base located on a two stepped pedestal. The shaft is straight and has the characteristic Aeolic collar underneath the capital, which slightly widens up towards the volutes. Since the surface of the capital is not clearly differentiated, there remains a possibility that the column is in fact of the Ionic style, but Aeolic is the usual style for columns on this specific kind of terracotta sarcophagus.[66] This is interesting since only a few Aeolic columns are known definitely to have been free-standing.[67]

Fig. 3.19: *Panathenaic-shaped amphora*, showing Athena between two pot-bearing Doric columns.

several sanctuaries only contain these foundations not betraying any information about the appearance or the height of the monument, leading to controversial reconstructions of the building within sites.

[63] Vessels as the crowning element of a column appear in the text of Pausanias as already mentioned. Furthermore, models of pot-stands can be documented for the sanctuary of Hera at Samos and, as existing column termination, at Didyma. Walter Hans (1965): 72; Tuchelt, Klaus (1996): 27-35 and (2007): 404.

[64] Neils, Jenifer (1992): 37, fig. 23.

[65] BM Clazomenian sarcophagus about 500 BC (GR 1896.6-15.1).

[66] Wesenberg, Burkhard (1971): cat 176 – 178.

Fig. 3.20: Aeolic (?) column as a pot-stand, Clazomenian sarcophagus.

The artistic medium is not the only factor explaining the character of representations of architectural elements; the skill of the artist is also a factor. A case in point is the Ionic capital shown at figure 3.9b.[68] It displays several characteristics of Ionic style and yet the capital is shown upside-down. The *canalis* rests on top of the shaft and volutes curl upwards, instead of downwards. Aside from the possibility of error, such an anomaly is more understandable in the context of a free-standing column; it is hard to imagine that entire temple served as master for the representation with the constant repetition of one and the same style.

[67] Indeed, column capitals of the Aeolic style and associated to a free-standing context can be confirmed archaeologically, this design appears to be of certain popularity. The use of this design is not limited to the Aeolis, free-standing posts can also be found in the Cyclades and Athens. For Aeolic columns in general see: Betancourt, Philipp (1977); for a capital from Delos see: figure 0.5; Martin, Roland (1973); For Aeolic columns at Athens: Raubitschek, Anton E. (1949): 162, fig. 20-21.

[68] Van Straten (1995): fig. 114; Copenhagen Nationalmuseet 13567 [V120].

Shields are another dedication that can be seen on top of free-standing columns. A prominent representation occurs on the so called Adeimantos *amphora* (Fig. 3.210).[69] As with so many vessels of that age, the surface of the *amphora* is broken into several shards, with only the upper part of the columnar dedication surviving. This is unmistakably Doric as three fine lines indicate the *anuli* which mark the transition to the *echinus*. The arch of the *echinus* turns steeply upwards, as in Doric of the Classical period. The painting shows not only the side of the abacus but also the top surface that bears the dedication. The presence of a shield is not surprising; shields were prominent objects of dedication as is confirmed by an inscription from the acropolis at Athens.[70] As mentioned for Pausanias in chapter II, a column bearing a shield – with a dragon in relief - stands on top of a tomb in Arcadia.[71]

Fig. 3.21: Reverse of the Adeimantos amphora with a Doric shield-stand.

It becomes evident that a painter's understanding of architectural styles is affected by artistic license. Not only are styles combined with dedications differently, but there is a difference in detail. Most striking however is the varied slenderness of free-standing columns. This is either explained by a difference in a painting's the structural requirements or by the limitations of the artist. Whether this slenderness can be seen as an authentic reproduction of reality, a brief excursion into representations of buildings follows as columns drawn in a building-integrated context can be compared to surviving members of its kind.

[69] AM 118 (2003): taf. 86-1
[70] Lippman, M. Scahill, D. Schultz, P. (2006): 551-563.
[71] Pausanias, *Descriptions of Greece*: VIII 11-8.

The representation of building integrated columns

Similar to literature, Greek artists reproduced columns for both structural contexts, and one of the oldest known representations of a Doric capital is associated with a building.[72] The vessel from Vari is dated around the end of the 7th century BC (Fig. 3.22).[73] The structural context of the column is indicated by an architrave. As part of a building, it could be expected that the column is of more slender proportions than the columns within a free-standing context as already investigated, but in fact the opposite is the case. The tapering shaft only exceeds the proportions of the Doric style. The column is ostensibly Doric: the shaft terminates with a regular amount of *anuli* (three lines are shown) and is crowned by an *echinus* of a near circular shape. The peculiar shape of the *echinus* is different to the design of the earliest capitals made in stone; as stated by Burkhardt Wesenberg, this is due to the fact that "the capitals […] have to be seen as pre-monumental, that is to say capitals not crafted of stone yet".[74] As indicated by the earlier investigation of literary sources, timber was the

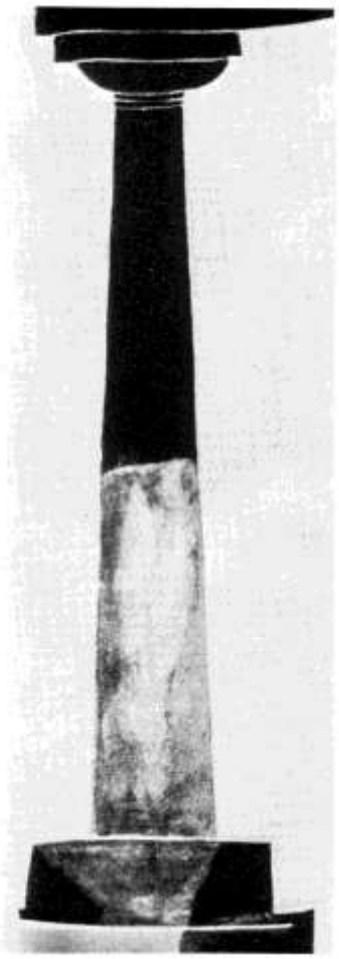


Fig. 3.22: Painting showing a Doric column as part of a building.

[72] The oldest representation of a Doric capital known is shown on two fragments of a protokortinthian *Skyphos*, found at Perachora. This vessel is dated to the third quarter of the 7th century BC and shows two bulging capitals next to each other. The reason of the association of the capitals with a building-integrated context is in their paired arrangement: Wesenberg, Burkhardt (1971): 51, cat. 111. For detailed information see: Dunbabin (1962): pl. 22, no. 420; Oliver-Smith (1969): 40, 75, no. 1, fig. 31; Wesenberg (1971): 59-61, Abb. 112; Howe (1985): 267, fig. 139; Barletta (2001): 128, fig. 75.

[73] Wesenberg, Burkhardt (1971): cat. 112.

[74] Wesenberg's suggestion is based on the differences of the execution of the *echinus* in paint to the shape of the *echinus* of capitals existing (Athena Pronaia at Delphi, the temple of Hera at Argos and a capital from the Apollo sanctuary at Aegina, Wesenberg, Burkhardt (1971): 52). As indicated by this chapter, comparing the appearance of proportions of architectural ornament in paint with existing architecture is difficult and a conclusion should not be based on one painted representation. Nevertheless, some illustrations are supposed to show the grain of wood and

material of choice for Greek constructions of the 7th century BC, therefore the use of timber for construction is plausible in general. In fact, the reproduction of Doric capitals is similar for both structural contexts' indicating that free-standing columns must have been crafted from this material too.

Fig. 3.23: Achilles in front of an *amphiprostyle* fountain house.

A common scene on vessels of the 6th century BC that depict a building is Achilles' pursuit of Troilos.[75] This scene is shown on a cup associated with the C-Painter and therefore dates to the second quarter of the sixth century BC (Fig. 3.23).[76] The centre of the cup shows Achilles chasing Troilos; the young Trojan is trying to escape on his horse. At the sides are his sister (Polyxena) on the far right, and the fountain-house (which is of importance to the story) with a waterspout in

other details that evoke a timber construction. Hittorff (1870): 254-266, Pl. 81; Eckhart (1953); Oliver-Smith (1969): 20-24. A wooden shaft on a stone base is shown on a late seventh-century skyphos-krater Athens (NM, inv. 16384), Eckhart (1953): 60; Oliver-Smith (1969): 75, no. 6, fig. 8; Howe (1985): 267, fig. 140; Hurwit (2000): 97, fig. 69. For the oldest surviving Doric stone capital (of the temple of Apollo on Aegina) see: Hoffelner, Klaus (1999): 18. Defining a precise sequence of Doric capitals according to the shape of the *echinus* is difficult, several different sequences can be found in the literature with a general accordance of the early capitals and a variation in the following. Wesenberg, Burkhardt (197): 58; Barletta, Barbara (2001): 83.

[75] To identify this scene, it requires the presence of the main characters which are the following: Achilles – usually shown as heavily armed; Troilos and his sister Polyxena –both are usually shown in motion and therefore trying to escape from Achilles. The well is commonly depicted as a building but other vessels show lower constructions of some kind. Nevertheless, the building is part of the story as Achilles is hiding behind it as the two arrive to fetch water. Beazeley, J.D. (1951): 22; Boardman, John (1974): 48, fig. 55l and (1998): 191, fig. 375.

[76] Beazeley, J.D. (1951): 21, Plate 8.2 / New York GR 521.

the shape of a lion on the left. The protruding roof of the building is supported on each side by a column displaying a large *echinus*. Whether the roof on top of the columns is intended to be a flat construction, as shown on the image is not certain, since the rim of the bowl cuts off the scene. The columns refer unmistakably to the Doric style, but the capitals do not resemble the shape of Doric *echinoi* as understood from existing columns. Similar to the crater of Vari, the shape of the two *echinoi* of the fountain house are also represented to be of circular shape.

Building:	Date:	Lower col. ø (cm):	Height (cm):	Height / L.c. ø:
Olympia, Hera	590	124.4	521.9	4.19 (varies)
Aegina, Aphaia	570-560	73.4	339.4	4.62
Syracuse, Apollo	565	200.6/184.1	797.5	3.97/4.33
Paestum, Old Hera	550-	137.9	646.8	4.69
Selinunte, temple C	550-530	135	572	4.23
Assos. Athena	540	91.4	477.5	5.22
Korinth, Apollo	540?	129	535	4.14
Selinunte D	535	136	681	5.00
Peastum, Basilica	530	146	648	4.43

Table 3.1: Proportions of Doric columns as part of buildings during the 6th century BC.

As already noted for *Panathenaic amphora*, the slenderness of column shafts shown in paint must not be seen as an accurate reproduction of the reality. This is thus a general phenomenon and does not solely apply to free-standing, dedicational columns. It is instructive to compare actual stone architectural columns with artistic representations.[77] As Table 3.1 shows, the ratio of the height to the lower diameter of constructed columns in the Archaic period varies between about 4 and 5.2. This investigation shows that the situation in paint is completely

[77] The height of the columns within a building-integrated context is reconstructed in accordance to the amount of column components surviving. The required repetition of similar columns for a building allows reconstructing the height of the columns accurately and the probability of one lowest drum existing is very high in order to define the lower column diameter (the diameter can also be estimated in accordance to the shafts taper). This possibility of comparing fragments with identical elements of the same object is not possible for columns in a free-standing context since these are made for a single dedication. At least two columns survived in complete: A small, monolithic Ionic column from Naxos and every component of column of the Naxiens at Delphi: Gruben, Gottfried (1989): 161-165; Amandry, Pierre (1951).

different; both structural contexts display similar proportions. Proposing slenderness as a hint for timber (for buildings) implies that slender columns in general were made from this material. Since columns in paint are not exposed to decay and structural requirements an explanation can also be found in the difference of the artistic medium.

That this might be the case becomes particularly visible on a cup associated with the Amasis painter and dated to the middle of the 6th century BC (Fig. 3.24).[78] The vessel shows five columns in total, all of them of Doric style.[79] Despite being part of the same building the capitals are not identical, nor are the shafts of similar proportions. As a scene of mythology, the representation of the divine stables cannot be over interpreted but it also cannot be assumed that the artist's intention was to represent columns of different material within a single building. The variation in the capitals might refer or to the reproduction of an architectural custom that happened to be lost; in this case the difference of the capitals execution refers to an existing variation of the Doric capital, or it is simply due to artistic licence, as previously noted for dedicational columns.

Fig. 3.24: The divine stables showing Doric columns of extreme slenderness.

[78] Boardman, John (1974): fig. 83.

[79] An unusual feature for Greek architecture can be seen underneath the vessel's rim; the buildings entablature (striking in its similarities to a Doric frieze; every second *metope* shows a painted symbol) is placed on an intermediate block above the *abacus* thus recalling Egyptian customs.

A less definite representation of an 'order' can be seen on the *Black-Figure* cup shown in figure 3.9a.[80] In front of the building, a column is shown holding up the porch of the flat roof which probably is the fountain house approached by Achilles. The capital of this column resembles the Doric style, but the lower half is lost. Below a compact *echinus* two white lines mark the *anuli*, but apart from this similarity the capital does not show further elements of the Doric style. Its shaft seems to taper inverted, reducing its diameter towards the bottom than towards the top, and above the *echinus* the *abacus* is entirely missing. The material for this irregular capital cannot be extracted from the painting, it perhaps could refer to stone – primarily due to the difference in shape to the 'wooden' one on the *crater* from Vari (Fig. 3.22), or perhaps to wood – by considering the vessels age and the buildings size.

Artistic licence is also evident for the design of a fountain house on a cup dated to approximately 550 BC. This small building displays a column approaching Doric proportions, but the capital cannot be called Doric without raising a few questions (Fig. 3.25a):[81] The post supports the porch of the flat-roofed building with an entablature executed as a massive horizontal rectangle. Apart from an *abacus* missing as mediator between capital and entablature the decoration painted onto the *echinus* is most unusual. This displays several vertical lines which resemble lobes, as seen in the Ionic style.[82] In fact, lobes or foliate ornament is also applied to Doric *echinoi* (either in paint or in relief) and to other torus-shaped column capitals of the 6th century BC.[83] A style of capital unknown to building can be seen on a cup dating to about the same period (Fig. 3.25b).[84] The scene depicted is not the pursuit of Troilos, but one in which an armed

[80] Stibbe, C.M. (1972): Tafel 100.1.

[81] Stibbe, C.M. (1972): taf. 96.

[82] A lobed collar or Ionic *echinus* is part of the Ionic capital, even though not necessarily symmetrically arranged. Bakker, K. (1999); Theorodescu, D. (1980); Kirchhoff, W. (1988).

[83] Several capitals, neither Doric nor Ionic, exist as the torus-shaped pot-stand at Didyma, the Doric-shaped cushions or capitals on top of the Caryatids at Athens as well as the inner *peristasis* capitals of the Artemision at Ephesus. For detail see: Martin, R. (1973): 378-382, no 4. fig. 6-8; La Rosa (1974): 139-140; Durm, J. (1881): 118.

[84] Stibbe, C.M. (1972): Tafel 107.1

warrior fights a snake. This pavilion is represented with a pitched roof, and again has a pillar supporting the porch. The proportions of this post are within the limitations of existing architectural supports of stone – could this material therefore apply? The capital has a triple tiered disk-like collar, a style not known in architecture. While it is possible that such capital existed, it seems more likely to be an artistic creation, warning that scholars must not overestimate the architectural reliability of graphical reproductions.

Fig. 3.25: Two cups displaying columns with un-canonical capitals at their centre. a) Achilles in front of a fountain house. b) A warrior fighting a snake in front of a hut.

To conclude, representations of columns integrated within the structural system of a building display comparable variations to those in a free-standing context. Comparing real and painted columns shows that extreme slenderness must be considered as a specific characteristic of this medium. In addition, both kinds of columnar representations display similar stylistic irregularities leading to painters evidently enjoying greater freedom of expression than architects and builders.

***

Summary, Chapter III

Vase paintings of the 6th century BC corroborate the existence of free-standing columns in Greek architecture but often displays differences in design. For most cases investigated, the artist only differentiates between types of columns in the capital. Doric and Ionic shafts are depicted with a similar range of slenderness. In fact, the term 'order' does not seem appropriate for columnar reproductions in paint. The purpose of pictorial columns varies as in literature and reality. They can be votive, funerary, part of a sporting event or an undefined marker that decorates the scene illustrated. When depicted as part of a sanctuary, free-standing columns seem secondary to key elements such as a statue, an altar, or a procession, seeming to provide a complement or frame for the scene. Often a column elevating a donation was used to indicate the sacred character of the place – in short as sacred furniture.

Reliable information about construction materials for columns cannot be obtained from these images. Neither slenderness nor the shape of the capital nor the presence of a base can be certainly associated with the use of timber. The two-dimensional character of a painting allows a greater tolerance since structural necessities do not pertain. Moreover, variation in the capitals used for buildings and dedications testifies to artistic flexibility. Columns in paintings also exhibit combinations not known archaeologically such as the compact Doric design topped by an elongated feline. For the medium of painting, architectural norms and geometry is subordinate to artistic taste.

It is not possible to satisfactorily answer the question of how strong an influence built columns had over painted columns, or vice versa. Yet artistic representations of columns combine with literary testimony to yield information about their character that cannot easily be obtained from archaeological evidence alone. The pictorial record confirms the existence of free-standing columns along with their significance and special nature. With allowance for artistic licence, this alerts us to a variety of style and design beyond Doric and Ionic norms that is only infrequently found archaeologically.

Because of the nature of artistic composition on objects such as vases it is impossible to extract any reliable indications about dimensions and in particular the height of free-standing columns both in absolute terms and relative to buildings. An interpretation of the archaeological evidence would be necessary to provide guidance on this matter.

Chapter IV: Size, Scale and Proportion

"Ha, ha! keep time: how sour sweet music is,
When time is broke and no proportion kept!"
William Shakespeare**,** King Richard II[1]

To pinpoint the role of free-standing columnar dedications during the early developmental stages of Greek design, it is important to identify and compare the elements within early Greek sanctuaries. In order to be able to do so, sanctuaries have to be reconstructed, a difficult task due to the small number of surviving fragments dating to this period. In fact, very few constructions survive above the level of foundations, and from this follow several difficulties. Gottfried Gruben advises strongly against underestimating reconstructing buildings since this task is prone to false interpretations as "… out of a few characteristic components and an trace of the foundations, an entire monument is quickly botched together…".[2] To make it even worse, early Archaic Greek sites are spread across the Mediterranean, reaching from Magna Graecia to Asia Minor and due to their age, these sites come with additional difficulties. Usually sites were not abandoned after the Archaic period; in fact, the opposite is the case. One phase is overlaid by another, leading to the replacement of previous monuments, leaving very few remains.

Interpreting the published reports of these sites is challenging. Whether elements combined together actually belong to the same period, or could be seen at the same time, is quite often secondary.[3] Those who have wished to reconstruct the appearance of major sanctuaries have often visualized the situation in an advanced period, the result of perhaps centuries of accumulated development. A

[1] Shakespeare, *The Tragedy of King Richard the Second*, 5.5.42-43

[2] Gruben, Gottfried (2007): "…Verfügt man lediglich über wenige charakteristische Bauteile und einen Fundamentrest, ist schnell ein ganzer Bau zusammengezimmert…", 35.

[3] One of the best examples for the false association of two monuments is the combination of the Sphinx bottom with an Ionic capital from the island of Aegina. Both objects were found at two different sites and have no joining surface as stated by Donos. For further discussion regarding the monument see Gruben (1965) and Donos (2008): 570.

representative example is Alfred Tournaire's magnificent illustration of Delphi showing key monuments.[4] Nevertheless, sometimes several elements within a given sanctuary have remained intact for centuries, providing an image of structures from the earliest phases, albeit a fragmented one.[5] For this dissertation the comparison of the height of free-standing columns with temples dating to the same period is of particular interest. As in the case of the sanctuary of Delphi, the temple of the 4th century BC is placed next to the column of the 6th century BC, and therefore the situation does not reflect the time of the column's erection (Fig. 4.1).[6] In order to fairly investigate early developments in Greek design, it is crucial to study elements from the same period, so that such comparison, like the music in William Shakespeare's quote, does not turn sour.

Fig. 4.1: Sanctuary of Apollo at Delphi, the site during the 4th century BC.

[4] *Paris - Rome - Athenes.* Paris (1982): 296-297.

[5] Lambert Schneider criticises the reconstruction of the *acropolis* at Athens as it - and in general - only consider the presence of buildings. Such visualisations are not ideal. The attempt to reduce visualisations to only show documented components with their original appearance and their original location dilutes their true setting in antiquity. The alternative adds a greater level of speculation and is therefore considered to be more courageous. Schneider, L. (1990): 89.

[6] Bommelaer, Jean-Francois and LARoche, Didier (1991).

Considering that archaeological research has focused on buildings, most columns discovered were allocated to this context - unless their capitals displayed a clear votive indication to the contrary, such as a socket to receive a sculpture. Other clues may point to a free-standing context may also exist. For use as supporting elements in buildings, a relative consistency in size of columns and their components (such as capitals) is required. A significant deviation of a column drum or capital excludes its use within the same building as the others; raising the possibility of a free-standing monument.[7] Consistency in capital design is also pertinent, and in fact, those of free-standing columns display a greater variety than those used as parts of buildings.[8] Absolute size provides another indication. Tiny columns have to have been free-standing as well as columns of monumental scale that are too large for any confirmed building at the site.[9] Indeed some monumental free-standing columns dwarfed the buildings around them, attracting the attention of worshippers.[10] Where free-standing dedications are incomplete, their height has to be reconstructed according comparative proportions of better preserved columns.

Many sanctuaries are documented with remains of votive dedications but for the Archaic period there are few examples of these. Especially when considering surviving traces of large or monumental free standing columns their number diminishes rapidly. Postulating free-standing columns of timber reduces

[7] The temple of Athena at Smyrna, with its Aeolic capitals, illustrates the difficulty. Due to the differences in sizes of the capitals it has to be questioned whether the temple had a *peristyle*. M. Akurgal prefers the interpretation of free-standing monuments, either with or without a dedication on top. Cook, J. M. and Nicholls, R.V. (1998); Akurgal, Ekrem (1983); Akurgal, Meral (2007): 128-131.

[8] A brief selection of free-standing columns is offered in appendix II. Besides the predominant 'orders' allocated to this structural context are designs as discs, striated *toroi*, rising volutes, petal crowns, foliate, etc.

[9] Only in very few cases can the location of a monumental column be confirmed by identifying its foundations. Due to the singularity of these monuments, identifying its foundations amongst other foundations for dedications is difficult; however such a large and heavy object would have required appropriate foundations.

[10] In her dissertation, Segal points out those soaring elements had a major influence on the appearance of the sanctuary, but the visual impact of the column from afar on pilgrims is not only bound to the presence of a column, the setting of the sanctuary within the landscape must have had some influence on the visibility of the monuments as well. Segal, Phoebe (2010).

the number further since the only surviving element has to be crafted from durable material such as stone. The base of such a wooden marker is presumably the component most likely to still exist, unless the capital is crafted from stone too. A (small) column capital from Delos can be interpreted to be combined with a wooden shaft. The deep socket is like a mortise for a wooden shaft. In fact, the treatment of the torus shows that this shaft was completely fitted inside the socket – an unusual connection technique for stone (Fig. 0.5).[11] However, these finds are rare and in order to evaluate the value of free-standing monuments their height (a clue towards their importance) has to be compared to the buildings within the same sanctuary. The following sanctuaries are selected for the availability of information they provide regarding the period of interest:

	Free-standing votive:	Height (approx.)	Building:	Height (estimated)	Date:
Delphi, Apollo [12]	Complete	12 m	Fragments	/	6th century
Aegina, Apollo [13]	Single drum, Half of dedication	7 - 7.5 m	Foundations and fragments	7 m	6th century
Aegina, Aphaia [14]	Fragments	12.5 – 14.5 m	Foundations and fragments	7 m	6th century
Samos, Hera [15]	Base	6.5 m (min)	foundations	4.5 m	8th century
Athens, Athena Nike [16]	Base	5 m (min)	nearby	uncertain	7th century
Athens, Kekropeion [17]	Capital	11 m (min)	nearby	uncertain	Last quarter 6th century

Table 4.1: Basic characteristics for selected sanctuaries.

To be able to compare the heights of votive columns and buildings, the spatial presence of the building is of particular importance, and therefore reconstructions of them are vital. Architecture was limited by technical capability,

[11] Ohnesorg, A (1994); Martin R. (1953).
[12] Amandry, Pierre (1953).
[13] Hoffelner Klaus (1996).
[14] Gruben, Gottfried (1965); Hoffelner Klaus (1996); Schwandner, E.-L. (1985).
[15] Buschor, E. und Schleif, H. (1934).
[16] Scholl, Andreas (2006); Mark, Ira S. (1993).
[17] Korres, Manolis (1997).

and in the 7th century BC spans across the interior were typically modest. As a result, buildings were relatively low in height (Fig. 0.7). For their height, a determining factor is the pitch of the roof, and this depends on the nature of the covering, which mainly depends on the material used. Tiles are one option but the first construction covered with marble tiles dates to the beginning of the 6th century BC, tiles of terracotta can be identified about a century earlier.[18] Before the use of tiles, perishable coverings were common such as reed or thatch or clay, a different solution with a different visual impact. Small-scale models show all three solutions for the roof – flat, slightly pitched and steeply pitched (Fig. 4.2):

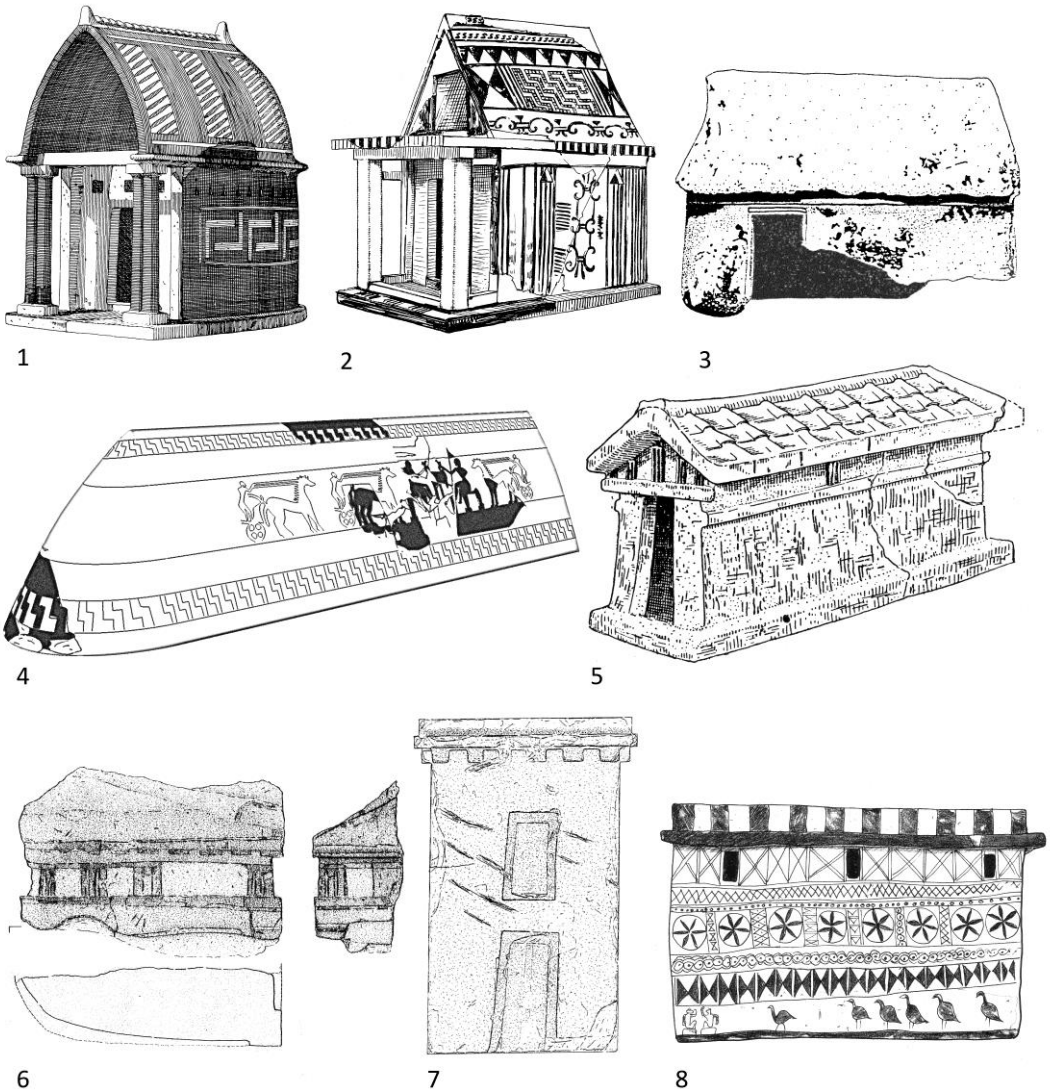


Fig. 4.2: House models: 1. Perachora / 2. Argos/ 3. Samos/ 4.Helike / 5. Medma / 6. Sparta?/ 7. Samos / 8. Sellada.

[18] The first building with marble roof tiles is allocated to the Oikos of the Naxiens at Delos. Ohnesorg, Aenne (1996): 41 and (1993): 53, 136; Gruben, Gottfried (1997): 318.

The use of thatched roofs, as suggested by the models shown in figure 4.2 1-4, is generally plausible though archaeological proof is rare.[19] Due to the steep angle required for the thatch, such roofs are taller than the ones of the same width. The angle for a roof made of reed varies from 45° to 70°.[20] Thatched roofs are visualized for both, common and special constructions, of the Archaic and Geometric periods. Domestic homes at Smyrna are reconstructed with this covering, as well as the prominent "Totenpalast" at Lefkandi.[21] As suggested by Ernst Buschor and based on the foundations of a central spine of columns, one phase of the temple of Hera at Samos had this type of covering too.[22] The second alternative is a flat covering made from earth or clay, which, even allowing for a parapet, keeps the elevation low. Examples of flat roofs can be seen at figure 4.2 7 and 8 but archaeological evidence for this type of roof is extremely rare.[23] An earthen roof dissolves completely with its environment after destruction of the building - although occasionally traces can be found. A waterspout made of stone, found at Sangri, implies the use of this covering for the first temple of Demeter on Naxos.[24] The foundation of this building also displays a central row of columns, a situation similar to the temple of Hera at Samos.[25] The third alternative for the roof are terracotta tiles. This solution can be seen at figure 4.2. 5 and 6. In fact, clay tiles became the archetypal solution for the covering of buildings of the Archaic period and fragments have been unearthed at several sites.[26] Buildings

[19] The conditions of very few sites allow the documentation of the remains of thatched roofs as in the case of Kalapodi. The building burned down and the thatched roof remained charred on the ground. Hellner, Nils (2010).

[20] Schneider (2010): 3.35; Popham, Calligas and Sackett (1993): 45.

[21] Dated to around 1000 BC, the Protogeometric building at Toumba is one of the oldest and certainly the largest. It is about 50 m long and reaches a height of about 10 m. Gruben, G. (2001): 27; Popham, Calligas and Sackett (1993); Akurgal, E. (1961): 301 and (1983): 18.

[22] Buschor, Ernst (1930): 16-17; Mertens, Dieter (2006): 50.

[23] Several domestic buildings are reconstructed with this roof. Akurgal, Ekrem (1983): abb. 20.

[24] Dated to the 8th century BC, this building is also of a rectangular form, with the entrance at the narrow end, but not as long as the temple of Hera at Samos. Gruben, G. (1997): 264; Lambrinoudakis, V. (1996): 55, Abb. 3.

[25] The archaeological remains of this building indicate that a thatched roof is not exclusively associated to the central spine as suggested by Buschor previously.

[26] Sites with tiles indicating the pitch of the roof are: the sanctuary of Apollo at Aegina (associated with the first stone temple of Apollo around 600 BC); Hoffelner, Klaus (1999): Tafel 59. The temple of Artemis at Corfu (about 580 BC); Schleif, Hans (1940): abb. 74.

with this cover are relatively low; the tallest position is at the ridge which rises from the walls at a pitch estimated to be about 17°.[27]

Following these considerations, the difficulty of reconstructing buildings of the 7th and 6th century BC which only exist in their foundations becomes apparent. Both, buildings and free-standing columns, survive highly fragmented, the comparison of their height proposed in this chapter are therefore, inevitably, of a theoretical nature. For our purposes here, the 3 dimensional models created can only serve as spatial models and carry few details besides the volume and height of the elements.

Delphi: Sanctuary of Apollo

As illustrated for the sanctuary at Delphi, in front of the temple of the 4th century BC stood an Ionic column of the early 6th century BC (Fig. 4.1).[28] The building is in a fairly good state of preservation, while that of the column is outstanding for such a monument dating to the Archaic period. All of the elements of the shaft still exist, allowing for a complete reconstruction of its height (Fig. 4.3).[29] The shaft alone measures 9 m and is crowned by a Cycladic Ionic capital, carrying the sculpture of a Sphinx, which is also quite well preserved. The base of the monument is circular with a diameter of about 0.95 m followed by the shaft displaying 44 *flutes*.[30] With a total height of 10.22 m, the column is tall but two further metres have to be added to its height due to the dedication on top. Regarding columnar proportions, the height of the column of the Naxians at Delphi is equivalent to about 10.7 times the lower column diameter.[31] By reaching more than 12 m, the column is about as tall as a single column from the *peristasis* of the Temple of Apollo, but for a valid comparison we would have to consider a building which is contemporary with the column dedication.

[27] The value for this type of construction has been obtained from the pediment of the temple of Artemis at Corfu. Schleif, H. Rodenwaldt, G. (1940): Taf. 26.
[28] Bommelaer, Jean-Francois and LaRoche, Didier (1991): Planche II no. 328.
[29] Amandry, Pierre (1953); Gruben, Gottfried (1996): Abb. 18.
[30] Bommelaer, Jean-Francois and LaRoche, D. (1991): 144-147, 149 fig. 57; Amandry, P. (1953).
[31] Gruben, Gottfried (1965): 131. For a list of columnar proportions, including their restored height see: Gruben, Gottfried (1996): Abb. 17 -18.

In order to be able to perform such a task, it is necessary to attempt, as best as possible, a reconstruction of the sanctuary in the same period as the column. However, this is problematic for the early 6th century BC.[32] Only a few fragments allocated to this temple of Apollo survived but without further discoveries a reliable assessment of the buildings height is not possible.[33] The temple from the Classical period must have had a predecessor as the sanctuary is already mentioned in Homer's catalogue, documenting a place called "rocky Pytho".[34] But, despite this literal documentation it is not certain whether the site had a building during Homer's period. According to a myth, the early phases of the temple of Apollo were constructed of laurel, fern (or wax/feathers) and bronze.[35] Whether any of these constructions are authentic has to be called into question, but it is clear that if there was a predecessor from the 7th or early 6th century, it must have been relatively low compared to the towering free-standing column.

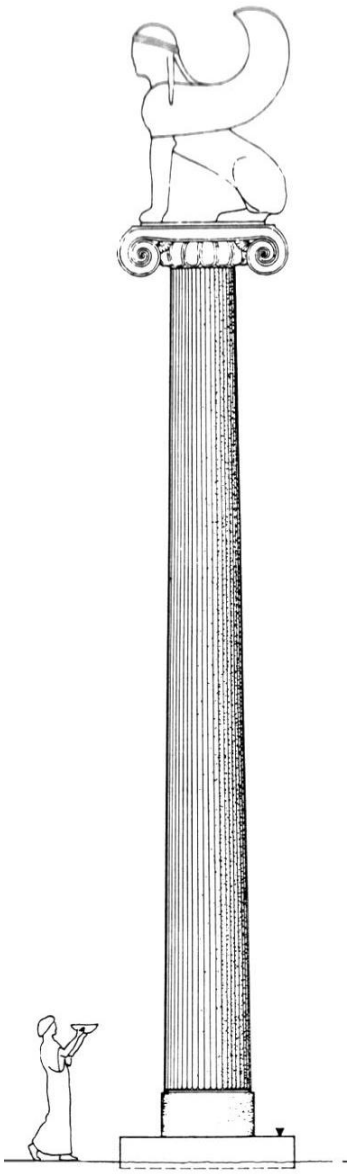


Fig. 4.3: Sphinx of the Naxiens, after Gruben.

[32] The site included more than one building making a decisive allocation of fragments difficult. Besides temple of Apollo the area contained a temple of Athena Pronaia. These columns are tall - they reach a height between 3.38 to 3.74 m resulting to a ratio of 7.1 times the lower column diameter, a very high value for Doric architecture of this period (table 3.1). Gruben, G. (1965/2007): 131; Barletta, B.(1999): 57- 59, 83, figs. 26, 28.

[33] Laroche combines a *triglyphon* with the house model from Argos (fig. 4.2-2). The result is a small hut with a Doric frieze. Despite not being certain that this large block actually belongs to a building, the proportions of the *triglyphon* suggest a building of greater size. Laroche, D. (2001): 324, 328. Apart from this single block several column drums exist and large roof tiles, dating to ca 670-650: Luce (2008): 98-108, LeRoy (1990). For discussion see Wilson Jones (forthcoming): chapter 2.

[34] Homer, *Iliad*. II 519.

[35] Pausanias, *Descriptions of Greece*. 10-5,9/16. For contrasting or partial versions see *Homeric Hymn to Apollo*, 295-299; Strabo 9.421. For discussion see Sourvinou-Inwood (1979); (1991): 192-216; Rutherford (2001): 216-232; Marconi (2009): 9-12.

Whether this monument was visible from far to act as a beacon attracting pilgrims is questionable.[36] The sanctuary of Delphi is situated on a mountain slope, consisting of terraces, not only putting buildings onto higher terrain than the column but also forming the background of the site as visible from the approach.

Fig. 4.4: View of the sanctuary of Apollo, Aegina. The column visible is the last standing member of the temple of the 4th century BC.

Aegina: Sanctuary of Apollo

In contrast to the terraced sanctuary at Delphi, a free-standing column at the sanctuary of Apollo on the island of Aegina is better suited to have served as a beacon since this sanctuary is located at the shore (Fig. 4.4).[37] Regarding the heights of the elements within it, the 'sacred furniture', during the early Archaic period, the sanctuary of Apollo is also better suited to this investigation. There is sufficient evidence for a comparison of the heights and spatial presence between the tallest monumental column and the temple dating to the same period.[38]

[36] As proposed by Phoebe Segal in her already mentioned dissertation,

[37] This sanctuary matches precisely the situation described by Phoebe Segal. Hoffelner, Klaus (1999): 9, Abb. A.

[38] The oldest fragments of a temple date to around 600 BC. Hoffelner, Klaus (1999): 43, 62-64.

The reconstruction of the first temple of Apollo is based on several fragments, as well as its foundations which have been partially covered by the temple of the later period. As these foundations show, the building had two Doric columns in *antis*. Of the entablature, resting on top of the walls and columns, only a few fragments exist, mainly belonging to *triglyphs* and the *geison*, but nothing remains of the architrave. The temple is of the Doric style, as documented by the capitals, one of which remains almost intact. The height of the columns (and the walls around them) is conjectural as not a single fragment of their shafts exists but the height can be assumed to follow proportions of the Doric style. The preserved capital defines the upper diameter of the columns, while the lower is visible by a verge line on the *stylobate*.[39] Other parts of the architecture are scarce, with only some fragments of the frieze and parts of the pediment remaining. Due to the shortage of fragments Klaus Hoffelner uses the slightly younger "ältere Aphaiatempel" (a temple at a sanctuary nearby) as role model to reconstruct the missing architrave.[40] As confirmed by several fragments scattered around the site, the roof of Apollo's temple was constructed from tiles. This is consistent with several fragments of a large *disk-acroterion*, which has to be located at the centre above the pediment. With this type of covering, the building reached up to a height from stylobate to the apex of more than six metres. [41]

The temple is thus of significant size for its period, but it was not the only prominent structure in the sanctuary, for at the site remains a fragment of a monumental free-standing column. The huge drum was discovered in a

[39] The upper diameter of the shaft can be obtained from the capital (44.7 cm), the lower diameter, as visible at the mark, measures about 58 cm. Hoffelner, Klaus (1999): 16-17.

[40] With this analogy comes also the difficulty of reconstructing the height of the walls, Hoffelner proposes 6 layers of wall-blocks (similar to the temple of Aphaia), leading to a height of 3.24 m. As Hoffelner states, this is needed to counter the "overwhelming" effect of the entablature, which is also taken from the Aphaia temple. The height and proportions of the two Doric columns in antis can be used as an alternative for this reconstruction. Following Hoffelner, this ratio correlates to 1:5.6 of their lower column diameter, a very high value compared to columns in a building integrated context of the same period – as seen at table 3.1. The reduction of one layer creates a height of 2.88 m and a ratio of 1:4.9 - still a high value but closer to the proportions of the 6th century BC. A further reduction by another block comes down to 1:4.3, a common ratio. Hoffelner, Klaus (1999): 34; Schwandner, Ernst Ludwig (1985): 102.

[41] The slope of the roof is set to 17°, defining the height of the building.

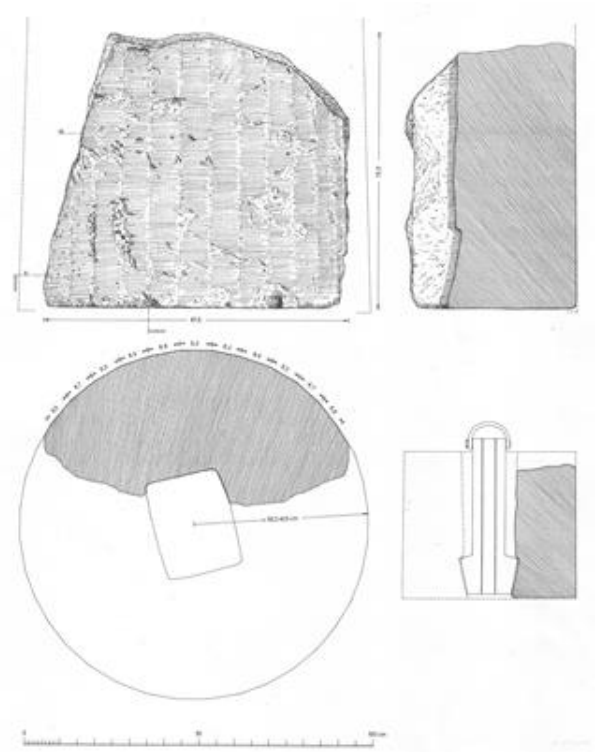


Fig. 4.5: Monumental column drum found at the sanctuary of Apollo, Aegina.

destruction(?) layer, therefore its original location is unknown.[42] The completed diameter measures about 1 m and, despite the fact that its position is not certain, the presence of a lifting hole suggests a position not at the bottom of the shaft (Fig. 4.5). A total height of the monument of about 5.5 m seems plausible.[43] Apart from the height, the style of the monument is also not certain, no capital has been found fiting its size. According to the strong taper of the shaft, as measured on the drum fragment, the Doric style is generally preferred.[44] Based on its style the drum must be old. The thirty-six facets of the shaft are interpreted by Gruben to indicate an early date, towards the end of the 7th century BC.[45] However, dating a shaft fragment is close to impossible. Columnar dedications are more accurately dated according to the style of their dedication or capital, which in this case has not been found. Nevertheless, an object has been

[42] Compare to the later temples, the first temple of Apollo is located significantly closer to the altar; this increase of extents during the centuries is common for Greek sanctuaries and can be confirmed for several sites. Hoffelner, Klaus (1999): Taf. 68; The increase in space is also needed to provided enough room for the increasing temples, of which, most prominently the situation at the Heraion at Samos can be traced. Gruben, Gottfried (2001): 350.

[43] A position higher up the shaft is not necessarily the case as the stylobate blocks at the sanctuary of Hera at Argos are also equipped with lifting loops. Columnar monuments are commonly restored according to the proportions of lower diameter to height - a position within the first meter(s) of the monument changes therefore the height only marginally. Hoffelner, Klaus (1996): 11, 12, Abb. 1; Hellner, Nils (2004): 74.

[44] This is based on the presence of facets rather than flutes as well as it is generally believed that the strong taper of the shaft can be seen as an indicator for the Doric style. The column drum from Aegina inclines about 5.8 cm per meter rising but this is only estimated due to only 79 cm of the shafts' height surviving. Hoffelner, Klaus (1996): 10-14; Durm, Josef (1881): 166.

[45] The use of flutes is, in contrast to facets, used for the Ionic column at the Aphaia sanctuary, which counts 36. Unusual is their large number as the later canonical amount varies from 16 to 24 with the great majority being at 20. Gruben, Gottfried (1965): 170, 190.

found within the precinct that matches the size. A bottom of a large feline – perhaps a Sphinx - exists and it has already been suggested that they were once part of the same dedication.[46] Combining these two fragments seems appropriate indeed, as a feline of this size would have required an equally large column to elevate it.[47] No other remains of an adequate support have been unearthed in the sanctuary, making their association likely indeed. The sculpture of the feline is dated around 620 BC on the basis of style and hence such a date has been proposed for that of the whole column.[48]

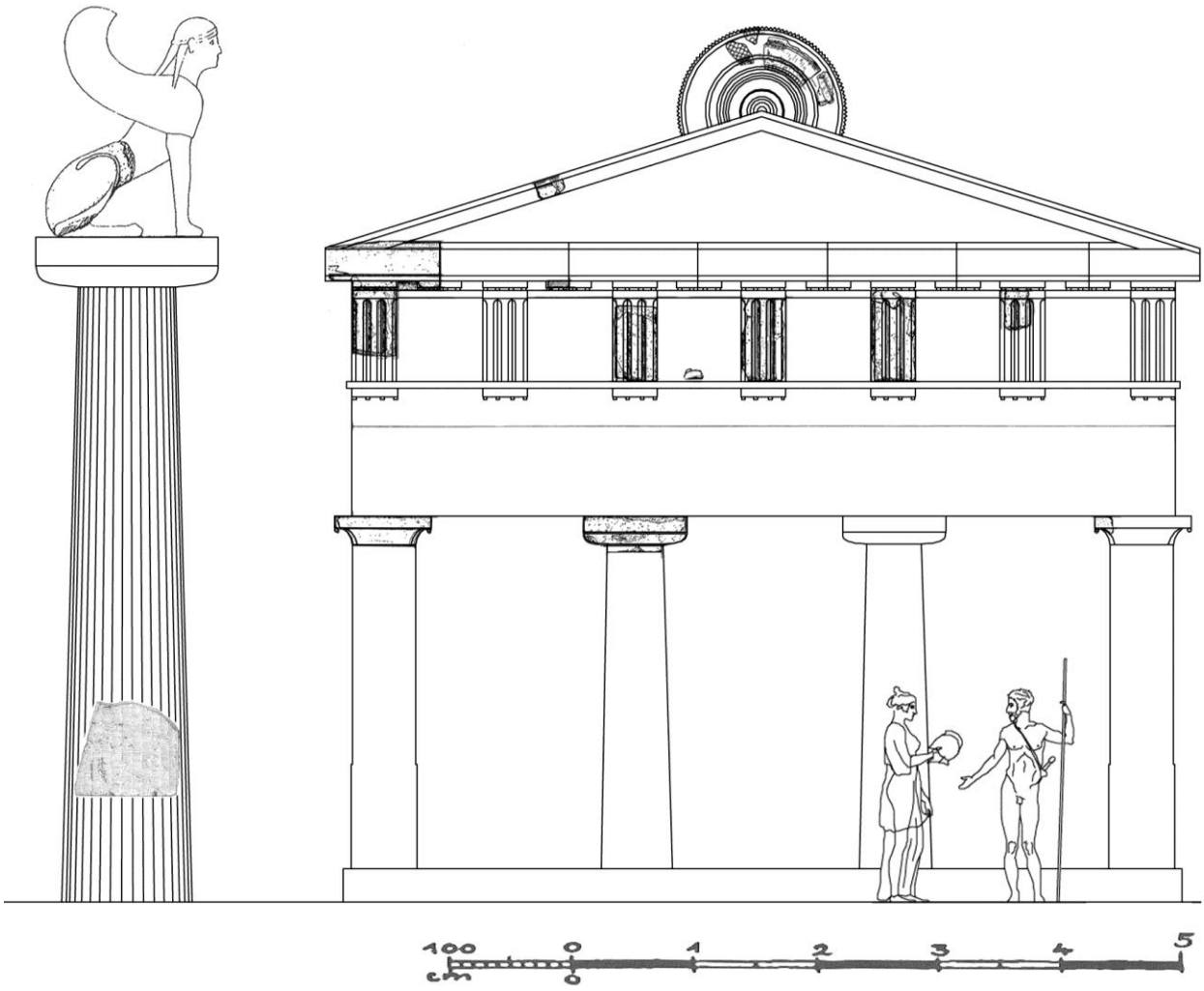


Fig. 4.6: Sanctuary of Apollo, the 1st stone temple and the monumental Doric column.

[46] Walter-Karydi, E. (1987): 49, Taf. 9,2.

[47] Hoffelner compares the dimensions of the column with the Sphinx columns of Aphaia and Delphi - two monuments of the Ionic style. Hoffelner, Klaus (1996): 12.

[48] Buschor, E. (1927): 209-211, Beilage XXV, 1.2 Abb. 1.

With a height of about 5.5 m, it demonstrates that the free-standing Doric column is the tallest dedication in the Sanctuary of Apollo. Factoring in another 2 m for the winged feline, the monument stretches as high as the building (Fig. 4.6).[49] Since sanctuaries were cluttered with dedications, of which most only reached a lower height, the high location afforded by a column would certainly have increased the prominence brought to the sculpture. The combination of a Sphinx and a Doric column would be unusual since most known examples are combined with Ionic, but as indicated by several illustrations from the Archaic period in Black-Figure paintings, this is a plausible combination and should also be possible in reality.[50] The other possibility would be the conventional solution of an Ionic column as the support for the Sphinx; this adds another free-standing column to the precinct, and such a monument would be significantly taller due to the difference in proportions between the Doric and Ionic styles.[51]

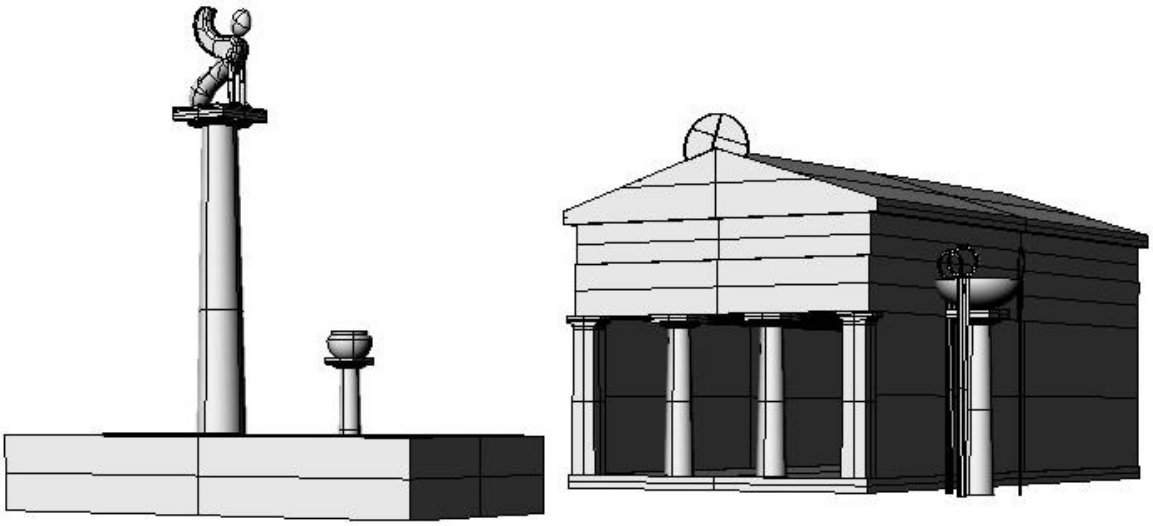


Fig. 4.7: Spatial model of the contents of the sanctuary of Apollo, around 600 BC, Aegina.

[49] It is to the dedication (column) and the *disk-acroterion* at the ridge (temple) to define the taller element in the sanctuary since the large Doric column is significantly taller than the building integrated columns. Hoffelner, Klaus (1996): taf. 60.

[50] For the detailed discussion on the use of the two components see chapter III. For sphinx on top of a Doric or Doric styled support see: figs. 3.4, - 3.7. For felines on top of a Doric or Doric styled support: figs. 3.10, 3.11.

[51] The erection of a twinned Ionic dedication for the two neighbouring sanctuaries on Aegina has already been proposed by Gruben. The size of the feet of the sculpture found at the Apollo sanctuary fit perfectly the dimensions of the Ionic capital found at the Aphaia sanctuary, leading to a free-standing Ionic column of maximal 14 ½ m. Gruben, Gottfried (2007): 128.

The huge drum is not the only fragment of a large votive column discovered at the sanctuary of Apollo, although it is the largest and probably the oldest. Two Doric capitals were also discovered in the enclosure and both were very likely used in a free-standing context. Neither capital is likely to have been used as a component for the temple, since one capital is too large, whilst the other one is too small. According to the shape of their *echinoi*, the larger capital was probably constructed around 600 BC and the smaller around 580 BC.[52] Apart from discrepancies in their sizes, the upper surfaces of both display a concavity that indicates the fitting for a shallow bowl, even though no object has been discovered which could be allocated to this position. According to the columns diameter visible, the column can be estimated to a height of approximately 3.5 m but the height of the entire monument cannot be assessed without considering the object elevated by this column.

The fitting visible at the upper surface of the capitals allows for consideration of various options for the object elevated, but two prominent dedications seem more likely than others. Either the columns elevate a shallow bowl or pot, or they serve as the central support of a large tripod. Tripods were prominent dedications; their presence in sanctuaries is regularly documented both archaeologically and by representations.[53] Since tripods had additional central supports, the proportions of which vary, their total height is therefore difficult to assess. Nassos Papalexandrou visualized this variety in an alignment at the sanctuary of Ptoios at Kastraki. The proportions of the central support differ between very slender and very bulky.[54] Following the proportions known for Doric columns, the larger capital used as tripod bearer can be reconstructed to a

[52] Similar to the existing capital of the temple, the free-standing Doric capital is probably one of the oldest existing. Hoffelner, Klaus (1996): 16-18; Schwandner, Ernst Ludwig (1985); Schleif, Hans (1940); Barletta, Barbara (2001): 83. For the discussion on the difficulty in dating Doric capitals according to the shape of the *echinus* see footnote 73 in chapter III.

[53] Wilson Jones Mark, (2002) and (forthcoming): chapter 8; Schwendemann (1921).

[54] None of the capitals of the supports at Kastraki have been allocated to this context. The Doric style seems plausible in general for this use, but as long as this style cannot be certainly associated to the purpose; the supports are not necessarily of Doric proportions. Papalexandrou, Nassos (2008): 274.

maximum height of about 4.5 m.[55] Another option is indicated by the mortise at the centre of the larger capital, it may have supported a sculpture, a suggestion already made by Hoffelner.[56] Bronze sculptures were not bound to the area provided by the upper surface of the capital and often their size varied, and as Anton Raubitschek states - as already mentioned in the introduction; a small statue required a tall support.[57] In any event, these dedications may have been large, but were definitely not monumental. Both columns, including their dedications, certainly did not exceed the height of the building, but would have filled the space around it (Fig. 4.7).[58]

According to the existing fragments several large columnar dedications stood in the sanctuary of Apollo at Aegina at the beginning of the 6th century BC. The Sphinx column occupied a special position. Built around 620 BC, this monument predates the construction of the first stone temple and, measuring about 7.5 m in height, it still remained as tall as the slightly later temple. Given the age and size of this monumental free-standing column, it is possible that it and other such dedications played an important role in the development of the Doric style.[59] Dedications in the form of cauldrons or tripods are supported by an ornamented element which in itself had a significant visual impact on the appearance of the site.

[55] Indeed, a dedication of 4.5 m is a relatively tall dedication and has to be placed in this end of the range of possibilities. The tripods of the alignment are reconstructed by Papalexandrou to be a significantly lower height – half this size. In fact, the heights of the tripods vary from foundation to foundation (between 1½ m and 2½ m), but the arrangement is dated to to the same period; that is, from the middle of the 6th to the last decade of the 6th century BC.

[56] A sculpture would not require a concavity in its supporting surface and with a square socket of 10 cm x 10 cm and a depth of about 5 cm, the socket is relatively small. Hoffelner, Klaus (1996): 19.

[57] A bronze divinity, found in the sanctuary of Zeus at Ugento, fits perfectly the rectangular socket of a Doric capital found within the same precinct. This statue is relatively small, about 70 cm in height, but its positioning on top of a column is without doubt. Raubitschek, Anton (1939): 161; Degrassi, Nevio (1981): 125.

[58] The reconstruction of the free-standing column's height is based on the same proportions used for the two Doric columns in antis of the temple, as proposed by Hoffelner (a ratio of 1:5.6).

[59] As mentioned in chapter III, the crater of Vari (Fig. 3.22) refers to an early Doric column generally believed to represent a column made from timber. This early representation is predated by this monumental Doric column, which also required an appropriate phase of development.

Aegina: Sanctuary of Aphaia

The importance of free-standing columns becomes particularly evident at the sanctuary of the goddess Aphaia, also on the island of Aegina. This site contained an early temple, constructed during the second half of the 6th century BC, which is predated by a monumental Ionic column elevating a Sphinx.[60] The column is dated to the turn of the 7th-6th century and therefore is not only older than the building but also taller, underlining its significance.

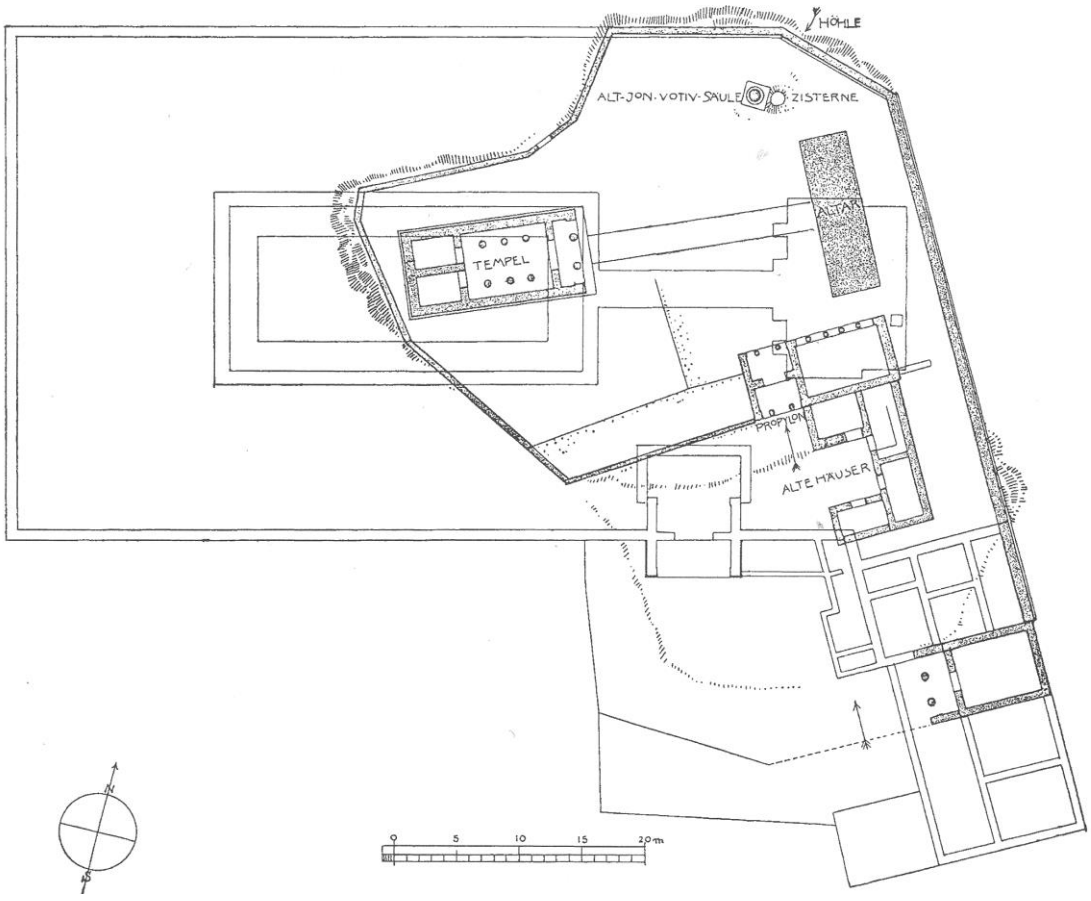


Fig. 4.8: Position and plan of the first temple in stone of Aphaia, 570/560 BC.

Several fragments of the large Ionic column survive, indeed there are traces of practically every component. However, this state of preservation does not allow a definite estimate of the height, and a minimum and a maximum has

[60] The date and appearance of the temple has caused a lively debate in the past, however, according to recent investigations, the free-standing column predates the building. Furtwängler, Adolf Fiechter, E.R. Thiersch, H. (1906); Gruben, Gottfried (1965); Williams, Dyfri (1982); Schwandner, Ernst-Ludwig (1985).

been proposed by Gruben. His reconstruction places the first element of the column, a large plinth with a diameter of 1.52 m, directly on the existing foundation.[61] Fragments of the next block indicate a lower diameter of 1.19 m. More than half of the capital has survived, from which the upper diameter of the shaft can be measured (Fig. 0.4).[62] Gruben estimated a slenderness ratio between 9 to 10½ for the whole column. This produces a height of between 10 and 12.5 metres excluding the sculpture on top.[63] The question remains as to its nature. Not a single fragment fitting the dimensions of the capital has been discovered at the site, but the cavities at the upper surface indicate the dedication of a sitting feline, as a Sphinx for example.[64] A winged feline of this size represents a monumental dedication, and since a gigantic sculpture was discovered at the sanctuary of Apollo nearby, both have already been associated together despite being discovered at significant distance to each other.[65] The fittings at the capital and the dimension of the feline match perfectly, an indicator for Gruben to assume the use of a similar sculpture: "The […] body of a larger-than-life sphinx of island marble […] matches in measure, position and style to the capital, therefore a paired dedication has to be considered."[66] Including such a sculpture, the monument's

[61] Fiechter prefers a lower diameter of 1.45 m for the column, which is determined by a score line visible on the foundation. A later evaluation by Gruben could not confirm the existence of the line and therefore refuses it for consideration. In addition, Gruben prefers a plinth underneath the monument rather than placing it immediately on the foundation. Gruben, G. (1965): 112-116 esp. 114.

[62] This mark is scratched into the surface and defines the maximum diameter for the shaft at 0.86 cm. Gruben, Gottfried (1965): 122.

[63] Due to its incompleteness, Gruben suggests a tolerance of + 0.50 m to – 1.00 m for the monument's height. Gruben, Gottfried (1965): 131.

[64] The combination of a Sphinx with this capital has already been made by Fiechter, Gruben's detailed investigation of the fragment confirms the combination. Gruben Gottfried (1965): 127; Furtwängler, Adolf Fiechter, E.R. Thiersch, H. (1906): 156-157; Cockerell, (1884): Taf. 11.

[65] Restoring monuments of antiquity on analogy to monuments of the same period is a common procedure. This procedure is not ideal for creating an authentic view of the past since it also results in a repetition of specific monuments and implies more canonical design practice than may exist in reality. Considering the evidence available some monuments may have been of singular occurrence instead. Pakkanen, Jari (2009): 3.

[66] "Der […] Unterkörper einer Überlebensgrossen Sphinx aus Inselmarmor, […] , passt in Massen, Stellung und Stil so schlagend auf unser Kapitell, dass man fast an eine Doppelweihung glauben möchte". Even after suggesting the composition of a similar Sphinx on top of this columnar monument Gruben is aware of the general "invalidity" of this action. Gruben, Gottfried (1965): 128.

size increases by another 2 m, extending the minimum height to 12.66 m and the maximum to a of 14.55 m.[67] This visual dominance is further enhanced by the monument's foundation as it is located at the highest point in the sanctuary (Fig. 4.8).[68]

The first archaeologically confirmed temple at the site is dated towards the second quarter of the 6th century BC.[69] The building was reconstructed by Ernst-Ludwig Schwandner as a Doric temple with four *prostyle* columns.[70] Following Schwandner, this building measures about 15 m by 7½ m in plan, with a height of around 7 m from the *stylobate* to ridge of the roof. The construction of the temple is dated according to an inscription referring to the first (stone?) temple built at the site, an *oikos*.[71] Discussion has centred on whether such a term could refer to the *prostyle* temple (as visualized by Schwandner).[72] On the other hand it is certain that the sanctuary was active long before the construction of this building,

[67] The height for the sculpture can be assessed to about 2 m. Gruben, Gottfried (1965): 129-132.

[68] The base is next to a well at the top of the site. Such a position certainly enhances the visual appearance of the monument. Despite this findspot for the foundation of the column, it might not be its original location. The foundation blocks display a series of numbering which either indicates a relocation of the monument or an assembly instruction created by the masons from the quarry. Furtwängler, Adolf Fiechter, E.R. Thiersch, H. (1906): 156; Gruben, Gottfried (1965): 137.

[69] The date for this building, the first stone temple of Aphaia, is based on the style of the ornament. Gruben prefers a date closer to the H-architecture at Athens, which is dated to 570-560 BC. Gruben, Gottfried (1965): 136-137.

[70] This construction stands in contrast to the previous reconstruction of Furtwängler, who prefers a building in *antis*. Furtwängler, Adolf. Fiechter, E.R. Thiersch, H. (1906): 484; Schwandner, Ernst-Ludwig (1985): 105-110.

[71] The inscription refers to the construction of a temple and an altar being made for Aphaia at this sanctuary. According to the style of the letters the inscription has to be placed a little after the second quarter of the 6th century BC, but Williams prefers an even later date, around the middle of the 6th century BC. Williams, Dyfri (1982).

[72] A difficulty arises with the term *oikos*, a general word for 'house' and Furtwängler proposes a small hut instead of an extensive building to match the insignificance of the term used by the inscription. He suggests a building of about 4 m by 8 m in plan, located in front of the early altar. Gruben offers a theory that connects the inscription with the "Ältere Porostempel" by actually referring to an older inscription, probably carved in timber. Dyfri Williams disagrees with this theory and argues that *naos* and *oikos* are, in fact, interchangeable terms. William's suggestion is supported by the fact that term *oikos* has also been used for the Artemision at Ephesos by Aristophanes, even though more than hundred years after the inscription in question here. Furtwängler, Adolf, Fiechter, E.R. Thiersch, H. (1906): 481, 482; Gruben, Gottfried (1965): 144; Williams, Dyfri (1982): 60.

as evidenced by pottery fragments and an early altar dating at least into the 7th century BC.[73] It seems probable that the site may not have contained a building prior to the 6th century BC. In any case, the "Ältere Porostempel" was certainly the first building in stone at the site; any prior construction, if such existed, is likely to have been made of perishable materials and therefore probably significantly smaller.

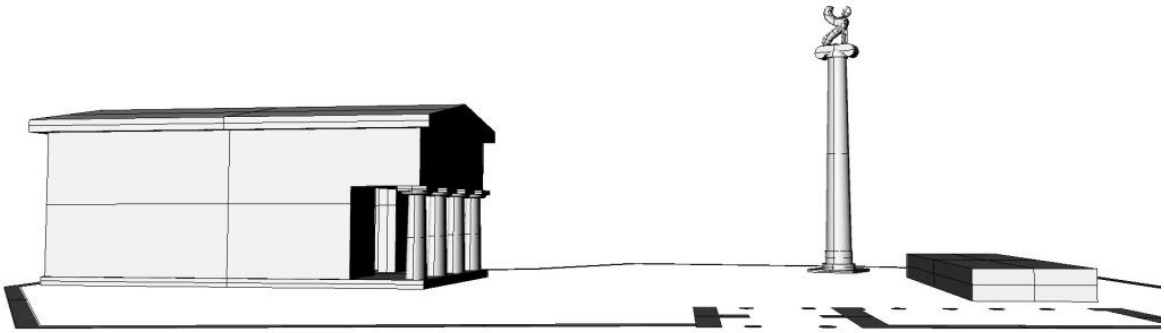


Fig 4.9: Spatial model of the two major dedications within the sanctuary of Aphaia, Aegina.

With a height of about 7 m, the building is not particularly tall for a construction of the second quarter of the 6th century BC, but the difference in height between the temple and the adjacent free-standing Ionic column is striking.[74] This monumental column not only predates the construction of the temple by a couple of decades, it is also nearly twice its height (Fig. 0.8). The building was no doubt not the only monument filling the mid- to lower levels of the sanctuary, there must have been several dedications of different heights surrounding it.[75] In contrast to the temple stands the column; as a monument

[73] Amongst the oldest artefacts found at the precinct are fragments of "large black coated pottery shards". The altar is dated by Gruben according to its old-fashioned construction technique to a period prior to the "Ältere Porostempel". Furtwängler, Adolf, Fiechter, E.R. Thiersch, H. (1906): 476 and 487; Gruben, Gottfried (1965):132-135 and 143.

[74] The temple of Aphaia is an impressive monument but not the vanguard for its time. At the beginning of the 6th century BC buildings can be confirmed which already exceed 10 m in height; for example the temple of Artemis at Corfu. This building is constructed about 580-570 BC and reaches about 14 m in height (its height was shortly exceeded by the temple of Hera at Samos), though the reconstruction by Schleif has to be reconsidered. Schleif, Hans (1940): 58-60, Taf. 26; Herdt, Georg et al (2013).

[75] The building can be no means be seen as isolated as indicated by Schwandner's illustration Schwandner, Ernst-Ludwig (1985): 110, Abb. 70

erected prior to the building, the Sphinx column towered high above the site. Even after the completion of the stone temple, the column remained unmatched in size, still dominating the sanctuary (Fig. 4.9). A column of this size can only have been free-standing at this time; buildings with stone columns of this size did not appear "until the construction of the Rhoikos-Temple around 570/560 BC."[76]

As is generally assumed for stone temples, monumental free-standing columns of stone might have also had some form of predecessor. The construction of a gigantic and costly enterprise such as the Ionic Sphinx column of Aphaia is not plausible without craftsmen being versed in the knowledge of how to manufacture such monuments. This implies a tradition of dedicational monuments even though there is no archaeological evidence remaining. Considering their age, it is likely that their forefathers were made from other, perishable materials, as with other construction in general. The use of timber for free-standing columns before the 6th century BC finds support in the stone carving technique. Craftsmen of this period were accustomed to working with timber and thus with woodworking tools therefore creating surfaces on stone which recollect surfaces of timber.[77] The change of material followed the change of tools, but during the moment of change, Greek craftsmen were dependent on the traditional equipment.[78]

Due to the perishable nature of wood, virtually no wooden objects remain.[79] A free-standing column with a timber shaft requires a firm footing, and

[76] "Erst mit der Erbauung des Rhoikos-Tempels gegen 570/560 v. Chr. wurde die Steinsäule grossen Formats für die Architektur erobert.". Gruben, Gottfried (1965): 149.

[77] The surfaces of early Ionic stone capitals are very flat and not well developed. Gruben states that the "flat relief which hardly develops out of a line drawing" can be compared with early Archaic timber carving. Gruben, Gottfried (1965): 125; Barletta B. (2009).

[78] That Greek craftsman had to learn how to build with the new material can be observed at the sanctuary of Apollo at Kalapodi. In addition to the southern of the two early Archaic temples betraying marks of tools known from working with timber, tools matching these marks have been found. Hellner, Nils (2010).

[79] Indeed, finding timber of that period is rare, however, under special circumstances, timber survives. A wooden base of the Archaic period survived at the sanctuary of Olympia but the socket at the upper side of the piece is too shallow to serve as a base for a free-standing column. Mallwitz, Alfred (1982): 262.

since a heavy material is necessary, this is likely to have been made from stone. A base-block made of stone has more of a chance to survive and therefore might still be present at site. At the sanctuary of Aphaia, such a block of 'primitive appearance' fitting the required conditions for this purpose does exist. This stone is relatively heavy (about 300 kg) and displays a socket of 25 cm depth at the top surface, which is deep enough to secure a wooden shaft (Fig. 4.10).[80] A block of this size would not have been able to support a wooden column of monumental size, but its use as counterweight for a free-standing dedication has to be considered, though not necessarily for a column. Given their later popularity, it can be conjectured that early Archaic Greek sanctuaries contained columnar dedications of variable sizes. It is possible that some stone bases suitable for the erection of monumental columns with a timber shaft might have been discovered by the excavations of the 20th century AD but not recognized as such.

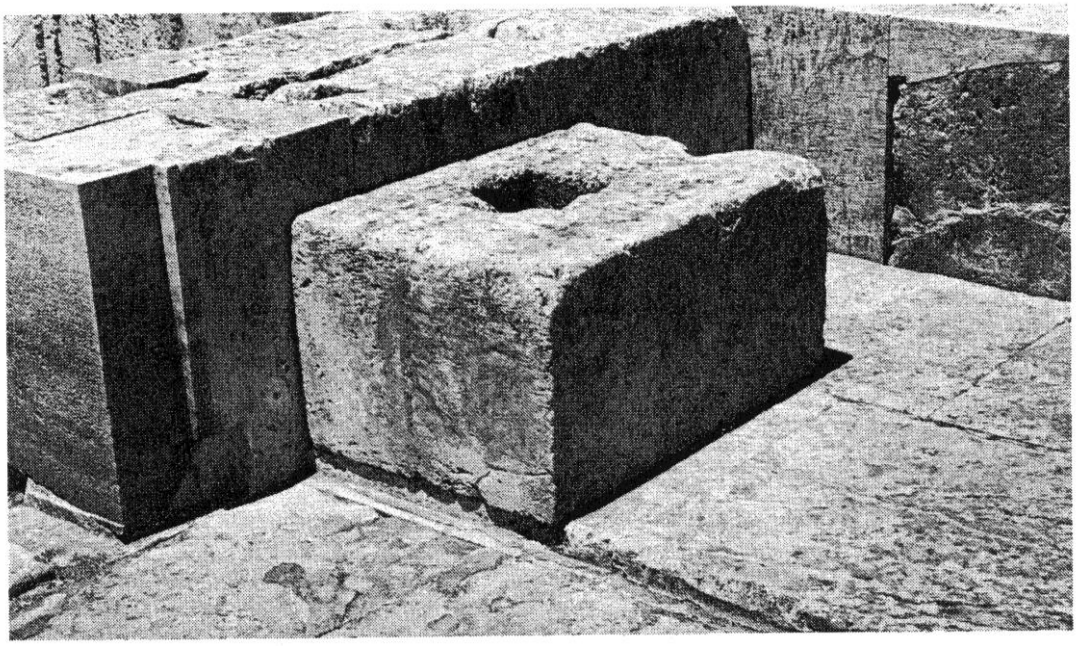


Fig 4.10: The large stone block located inside the remains of the younger temple of Aphaia.

[80] Interpreting this base as the counterweight of a wooden free-standing column is theoretical. However, with a height of 0.48 m and rectangular dimensions of 0.96 m x 0.65 m the block is very heavy - about 300 kg in total. With a weight as such the block is more than suited to secure a columnar post of significant height, a weight which seems inappropriate for the support of a statue kept inside the building as currently interpreted. Nevertheless, the block cannot be dated and its time of construction remains uncertain. Williams, D. (1982): 65, fig 5.

Samos: Sanctuary of Hera

Due to its traceable development, the Heraion on the island of Samos stands as a key sanctuary for Greek temple design. There is archaeological evidence for activity at this site going back to early times, while the remains of a significant temple dates to the first half of the 8th century BC.[81] This site witnessed at least two notable advances in monumental building design. The foundations of this first monumental building cover an area of 20 by 100 feet (6.50 m by 32.86 m), possibly a *Hekatompedon*. The first truly gigantic Greek temple, the *dipteros* of Rhoikos was constructed 200 years later.[82] This sanctuary is also notable for numerous large votive columns similarly dating to the 6th century BC, if not earlier as we shall see.

Fig. 4.11: Plan of the sanctuary of Hera at Samos, period before 660 BC.

[81] Only the foundations of this temple remain. Despite other components certainly allocated, Gruben suggests the Ionic style for the columns of this construction. Gruben, Gottfried (2001): 350; Walter, Hans (1965): 35.

[82] Walter, Hans (1965): 57; Gruben, Gottfried (2001): 351, 355.

The *Hekatompedon* was not the only building in the sanctuary of the 8th century BC. Foundations of several small huts and shrines stood around the space of a constantly increasing altar (Fig. 4.11).[83] Up to five small buildings and a *propylon* can be identified in the company of the temple near the foundation of the large altar of the great *dipteros* (580-540 BC). These huts are short compared to the *hundred-footer*, which was the longest building at site, but nonetheless these buildings are of importance. Reconstructing their height depends heavily on the type of the roof, as noted above. The earliest clay tiles from this site date to the 7th century BC, and can be associated with the second *Hekatompedon*, built after 660 BC.[84] A different solution has to be proposed for the first temple of Hera and a thatched construction has been suggested in the past.[85] As a thatched roof is visible on the model from Samos in figure 4.2-3, this is plausible but not the only option available; a flat roof, as displayed by figure 4.2-7 (also discovered at Samos), remains an alternative (Fig. 4.12).[86] The width of the first temple of Hera measures 6.5 m, with a thatched roof, the building could reach a height of seven metres.[87] This estimate presumes that the walls of the temple are as tall as a man,

[83] As stated by Mazarakis Ainian, buildings in sanctuaries are not necessarily temples, however the purposes of the buildings the foundations belong to is not certain. Buschor, E. und Schleif, H. (1934): 154, Beil. XLV; Walter, Hans (1965): 35, 41; Mazarakis Ainian, A. (1997): 282.

[84] Walter and Gruben assume that these tiles were used for the second temple of Hera, built on top of the foundations of the previous temple. Following a natural disaster during the second half of the 7th century BC, the construction of the new building became necessary. However, the existence of five other shrines within the sanctuary do not allow for the tiles to be allocated with certainly to the *Hekatompedon*, a reason for Gruben to not exclude the use of thatch as cover for the second building, even though the use of tiles for the first *Hekatompedon* seems likely ("… das Dach wahrscheinlich schon mit Tonziegeln gedeckt …"). Walter, Hans (1965): 46; Gruben, Gottfried (2001): 352.

[85] Reed, as cover, has already been confirmed for constructions in Greece dating to earlier periods. As a natural material, the use of Reed is self-evident for constructions of a period prior to the use of tiles but is not without adequate alternatives. Hans Walter suggests this material for the first building, especially due to the similarities of the elongated structure of the thatched "Totenpalast" of Lefkandi. Gruben, Gottfried (2001): 352; Walter, Hans (1965): 35. Popham, Calligas and Sackett (1993): 45.

[86] As proposed by Hermann Kienast, the existence of a *peristasis* for this period has to be rejected. This assumption changes the building's design and has significant implications on its height. Reducing the width at the front allows proposing a significantly lower building by still keeping a reasonable height for the interior. Kienast, Hermann (1996).

[87] A total height of 7 m is a respectable size for a building of the 8th and even for the 7th century BC. The temple of Athena at Smyrna reached little less but was of significantly shorter length. Cook, J. M. and Nicholls, R.V. (1998); Akurgal, Ekrem (1983): 63-78 and (1961): 301.

though this is not necessary due to the increasing height towards the middle of the building. Lower walls reduce the ridge to about five metres, still providing plenty of space at the middle.[88] In contrast to a thatched roof, a flat roof changes the spatial presence of the building significantly. A building with an appropriate loftiness could be 4½ metres in height. As regards the general appearance of a *Hekatompedon*, a flat roof would enhance the elongated character with its strict horizontality. Due to the technological limitations in this period, which meant that it was difficult to increase the width and height, the length of the temple marked it as a special construction.

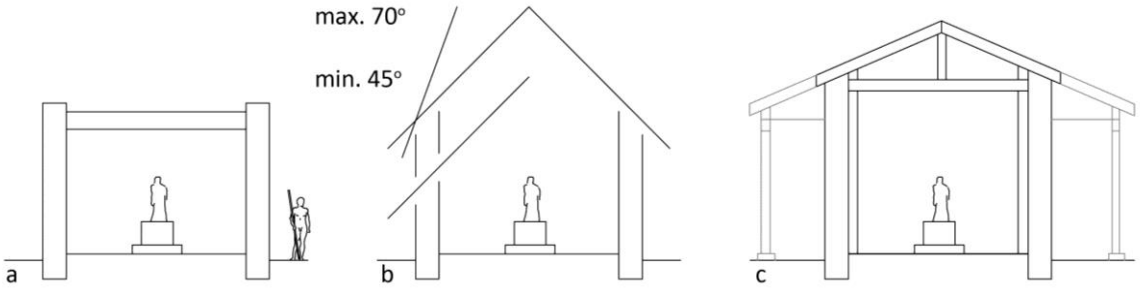


Fig. 4.12: Different roof types for the *Hekatompedon* – flat (a), thatched (b) and tiled (c) - for *Hekatompedon* II (the diagram includes the now rejected *peristasis*, for discussion on this topic see footnote 86).

Apart from the various structures mentioned the Heraion would have had plenty of votive dedications and, according to foundations discovered, some of these would have been enormous.[89] As suggested by Buschor: "at least by the first half of the 7th century, larger votives have been dedicated to the sanctuary, on

[88] The fragment of a 'warrior frieze' has been found at site; this fragment is interpreted as a decorative panel of the wall of the 2nd temple of Hera. According to this fragment, the 2nd temple must have had a solid wall construction (compared to the waddle-and-daub), with a significant wall height, therefore, a reduction of the 2nd temple is difficult – the panel would reach a lower height otherwise. A thatched reconstruction, with an interior wall height of 4 m, leads to a total height of about 9 m. Considering the discovery of clay tiles dating to this phase of the sanctuary and the re-arrangement of position of the interior supports, an alternative cover for the 2nd temple seems plausible. Gruben, Gottfried (2001): 351.

[89] Buschor and Schleif offer a list of the size and position of these foundations. Buschor, E. und Schleif, H. (1934): 168-170.

their own foundations and free-standing within the enclosure".[90] A foundation for a free-standing votive implies that it was of significant weight and size and of these one particular foundation in a circular shape stands out as being ideal for supporting perhaps a free-standing monumental column. This foundation is made of irregular stones and located about six metres in from the front of the temple.[91] As noted, a free-standing wooden column requires a base block to secure the shaft. Such a block would ideally be heavy and therefore made of stone. In fact, a block fitting the requirements in design and age has been discovered at site, weighing almost one ton.[92]

Fig. 4.13: Early column base (?); one ton heavy support for a dedication.

This block is of cylindrical shape with a diameter of 0.96 m and a height of 0.615 cm (Fig. 4.13).[93] Its upper surface displays a square socket of 0.57 m x 0.57 m, and with a depth of 0.316 m is certainly deep enough to fasten a tall timber shaft. Due to its weight it can be assumed that the block would have remained at its location. It also is too massive to elevate the cultic icon, which required a certain movability for its annual rite - whether inside the shelter of the temple or

[90] "... mindestens seit der ersten hälfte des siebenten Jahrhunderts, grössere Votive ins Heiligtum geweiht, auf eigenen Fundamenten frei im Heiligtum aufgestellt.". Buschor, E. und Schleif, H. (1934): 168.

[91] The publication addresses the foundation simply as 'Basis' - foundation. Dated to the earliest phase of the sanctuary, this area appears throughout the centuries, until the erection of the Dipteros of Rhoikos. An additional purpose for this foundation is defined by Walter, who states that it also served as a plinth, raising the object by "one layer of stone". Walter, Hans (1965): 29, 35, abb. 26; 35, abb. 33; 41, abb. 40; 47, abb. 47.

[92] As Buschor and Schleif confirm, the fragments are of high age since these have been found "at the lowest foundations of the southern ante of the first *Hekatompedon*". An association of this block with the "Basis" has already been made by its excavators. Buschor, E. und Schleif, H. (1934): 154, 161.

[93] Buschor, E. und Schleif, H. (1934): 158, Beilage LII/3.

outside in the sanctuary.[94] The block is suited to have supported a large and heavy dedication, and so would have been suited to a location outdoors. Given its

[94] According to custom at the sanctuary, the icon had to be washed annually at a ritual basin. For this ritual performance, the statue was carried out of the building, suggesting an icon of moderate size. Walter, Hans (1965): 20-24; Gruben, G. (2001): 350.

Fig. 4.14: Spatial reconstruction of the sanctuary of Hera, Samos, before 660 BC.

characteristics, it seems reasonable to interpret the stone as a counterweight, as a kind of early column base. It is clear that the shaft fitting into the socket would

have been tall, even monumental.[95] Due to the evidence available, this reconstruction (style and structure) has to be based on the proportions of free-standing columns of later periods but whether it actually appeared in the same way is not known - in fact, the shaft would not even have had to be circular. The square shape of the socket might suggest a rectangular shaft, but the top of the base also shows a circular score mark (0.64 m diameter), which can be interpreted as a trace-line of the column's lower diameter.[96] Depending on the style of the capital, if a style can be defined, the shaft could extend from about 6 to 7½ m.[97] Including a base, plinth and some sort of dedication, the column reaches even higher. The degree to which this dedication dominated the site depends on the nature of the roofs of the surrounding buildings. Since the shrines are relatively small, they were dwarfed by the column whatsoever their roof type. The same must have been the case for the second temple of Hera, since its roof is likely to have been tiled and therefore shallow (Fig. 4.11c). As for the first *Hekatompedon*, assuming a thatched roof implies a height for the ridge more or less equal to the height of the column but with a flat roof it would have been lower, in effect amplifying the visual prominence of the dedicational marker which could had been about three meter taller than the entire building (Fig. 4.14).

Perhaps this columnar marker towered over the first *Hekatompedon*, as it certainly did over the second and all the other buildings. It is only after the completion of the first gigantic temple, the *dipteros* of Rhoikos in 570-560 BC, that the dominance of this freestanding column came to an end but even then the erection of free-standing votive columns remained of some significance. Behind the foundations of this very first *dipteros*, the foundations of a line of free-

[95] Based on the weight of the base, the height of this monument cannot be accurately estimated, but an attempt can be made. The theoretical analysis of such a wooden column placed into the mortise of this post is executed in appendix I, suggesting a possible height of the monument.

[96] Buschor, Ernst und Schleif, Hans (1933): 161.

[97] Considering that the shaft of the monument is made of timber also suggests a timber component at the top. An indicator for the style can be obtained from Vitruvius, who states that the first temple of Juno at this site was in the Doric style; a clue which finds support in small models of votive columns with striated *toroi* at their top recollecting the Doric shape but displaying (for the Doric style) an unfamiliar slenderness. Buschor, Ernst (1930): Beilage XII, XI; Vitruvius, *de architectura libri decem* 7. 12, 2-3. Walter, Hans (1965): 72, abb. 72.

standing columns survived (Fig. 4.15).[98] Each column was about as tall as a single support of the building and was probably capped by a similar capital.[99] Several capitals displaying smooth and striated *toroi* have been found at the site, capitals which are definitely allocated to a free-standing context. As dedication bearers, these were often crowned by pots, bowls, statues and tripods. It is likely that the columns remained intact after the collapse of the first *dipteros*, but as soon as the second was planned (around 530 BC), the *temenos* was extended in size and the free-standing columns disappeared.[100]

Fig. 4.15: Free-standing columns components, displaying the, for this site typical, striated torus.

Given their great height, free-standing columns at Greek sanctuaries must have had a prestigious status. Votive columns dominated the height of their respective sanctuaries during the early phase of Greek architectural development. But a free-standing stone column towering above a site is not a phenomenon exclusive to Archaic sites and, despite the shortage of archaeological material, bases of stone are occasionally found that suggest the existence of wooden columns.

[98] The columns are described as a kind of fence, forming the rear of the *temenos*. Schede, Martin (1929): 4, Tafel 3; Walter, Hans (1965): 60; Gruben, Gottfried (2001): 355.

[99] The design of the temple's capital is unknown – stone fragments of striated toroi exist but nothing of a volute element. Hendrich, Christof (2007).

[100] Their foundations were covered by the gigantic *dipteros*, whether these were deconstructed and re-erected at a different location is not known. Walter, Hans (1965): 90-91.

Athens: Sanctuary of Athena Nike

The *acropolis* in Athens was clearly associated with the divine during the Archaic period and earlier. The separation into different areas indicates the worship of different divinities (Fig. 4.16).[101] That the site is old is certain. The existence of the Athenian *acropolis* as a sanctuary is recorded as early as the 8th century BC in both of Homer's key writings, the *Iliad* and the *Odyssey*.[102] Both works also document the presence of a house for the deity, but the terms used do not necessarily translate as a temple.[103] Contrasting with Homer's testimony, the first archaeologically attested remains of a building on top of the *acropolis* after the Mycenaean period are dated to the late 8th century BC or early 7th century BC. The remains of this building do not provide sufficient information to define its

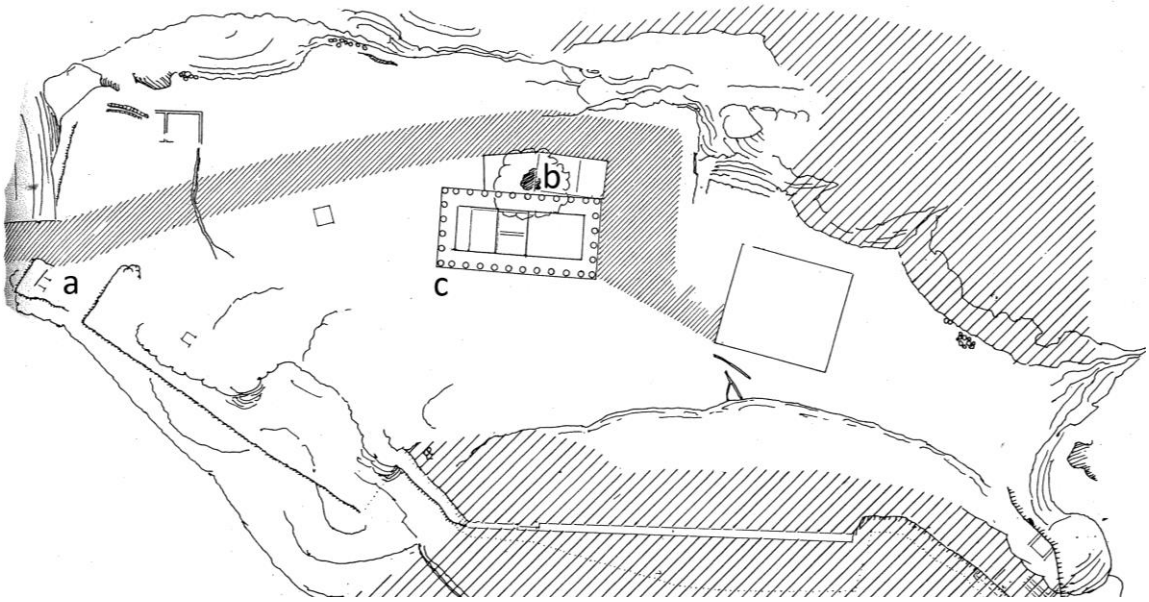


Fig. 4.16: Plan of the Athenian *acropolis*. Athena Nike site (a), Kekropeion (b), Old Athena temple (c).

[101] Bundgaard (1976): Plate K – 1.

[102] Homer, *Odyssey* 7, 81 and *Iliad* 2,546-551.

[103] As investigated by Andreas Scholl, the terms used by Homer are δόμος (*Odyssey*) and ναός (*Iliad*). Both cases refer to a building, the first to the house of Erechtheus, identified as the palace of the 'Ur-könig' of Athens. As the goddess Athena pays a visit to the city, she resides at this dwelling as a guest. The latter inverts the situation; this time it is Athena who 'owns' the building, understood to be a temple and Erechtheus is nominated by her, in terms of 'occupying' the building. According to Scholl, he can be addressed as her keeper or as her 'lodger'. Scholl, Andreas (2006): 15, 17.

location or to create a spatial model, as they merely consist of two stone bases.[104] However, it is possible not only to consider the existence of free-standing wooden columns, but also to pinpoint a prime spot for a columnar dedication.[105] At the Athena Nike site, a large stone block still remains *in situ* and might be interpreted as the support of a tall wooden shaft (Fig. 4.17a).[106]

Fig. 4.17: The Athena Nike district on top of the Mycenaean bastion; the old base/ repository (a), and two altars (b, c).

The base is split into two components, both of which remain on top of the Mycenaean bastion, flanking the road leading to the *acropolis* (Fig. 4.18a), where they were discovered.[107] The dimensions, design and choice of stone (*poros*)

[104] Both stone bases discovered have to be allocated to a building; neither displays a socket or a mortise at the upper surface that could receive the (wooden?) shaft. The height of the building cannot be assessed but, considering the limitations of its time, it must have been relatively low. Scholl, Andreas (2006): 19; Bundgaard, J. A. (1976): Taf. I.

[105] The area at which the Athena Nike district is located must be of significant value for the Athenian rite. It is the presence of this little sanctuary, located on top of the Mycenaean bastion beside the route up to the *acropolis* that forced an alteration of plan of the *propylaea*. Gruben, Gottfried (2001): 191-206.

[106] Mark, Ira S. (1993): plan a.

[107] The block is made of two stones, which were found below the foundations of the Athena Nike *naiskos*. Mark, Ira S. (1993): 21, fig. 2, plate 11; Balanos (1956): 785; Welter (1939): col 11; Scholl, Andreas (2006): 39, abb. 12 a-c.

suggest that this base was the support for a wooden shaft. As this part of the *acropolis* changed significantly throughout its history, the date of construction cannot be defined but, due to its location, this can be narrowed down.

The first building at this location is the so-called *pre-naiskos*, a small shrine of the 5th century BC (the predecessor of the standing temple). This building was created after the block was laid; this becomes clear by the alterations applied to the base.[108] The sides of the stone were significantly reduced in order to fit inside its new environment, but this was not the only change made to it; with the new orientation inside of the building came a new purpose. This purpose required a change of the formerly deep socket on the upper surface (Fig. 4.18b - which was required for the shaft). The new purpose required a larger but shallower mortise, instead of a 33 cm square and about 30 cm deep the block became a socket for the baseplate of a statue, now around 54 cm in size (Fig. 4.18c).[109] Since the space underneath the plate was no longer needed it was filled with dedications which remained in this sacrificial deposit until its discovery (Fig. 4.18e). If this socket was earlier used to fix a votive marker made of wood, a lower width or diameter of about 47 cm would be needed to cover the square mortise, which suggests a hypothetical height of more than five metres for the column.[110] With a minimal weight of 1.2 tons, the base would be able to keep a column of this size (or even a larger one) safely in position.[111]

[108] The non-parallel positioning of the base to the walls of the *pre-naiskos* suggests a different time of construction and a different use for the block during earlier phases. The use as support as a funerary column alike the column of Archilochos on Paros can be excluded as the *pre-naiskos* is too small..Mark, Ira S. (1993): 44, fig. 5; Ohnesorg, Aenne (1982).

[109] The new dimensions of the socket are about 54 cm square and about 10 cm deep; this was cut around the older 33 cm square and approximately 30 cm deep socket. As assumed by Mark and Scholl, the new measurements fit the use as support for a sculpture. Using the prior 30 cm deep socket for a sculpture of the proposed size by Scholl results into an unnecessarily firm fitted solution - especially by assuming a save location inside the shelter of a building. Scholl, Andreas (2006): 41 Abb. 12a-d; Mark, Ira S. (1993): 28, fig 3; Giraud, Demosthenes (1994).

[110] As indicated by the base discovered at Samos, a square tenon would make sense for a free-standing wooden column.

[111] Due to the reshaping of the block, its original dimensions are not known and can only be surmised. Estimating the remains to about 1200 kg is a relatively low value for a block that could reach up to 2 tons with the mortise perfectly centred.

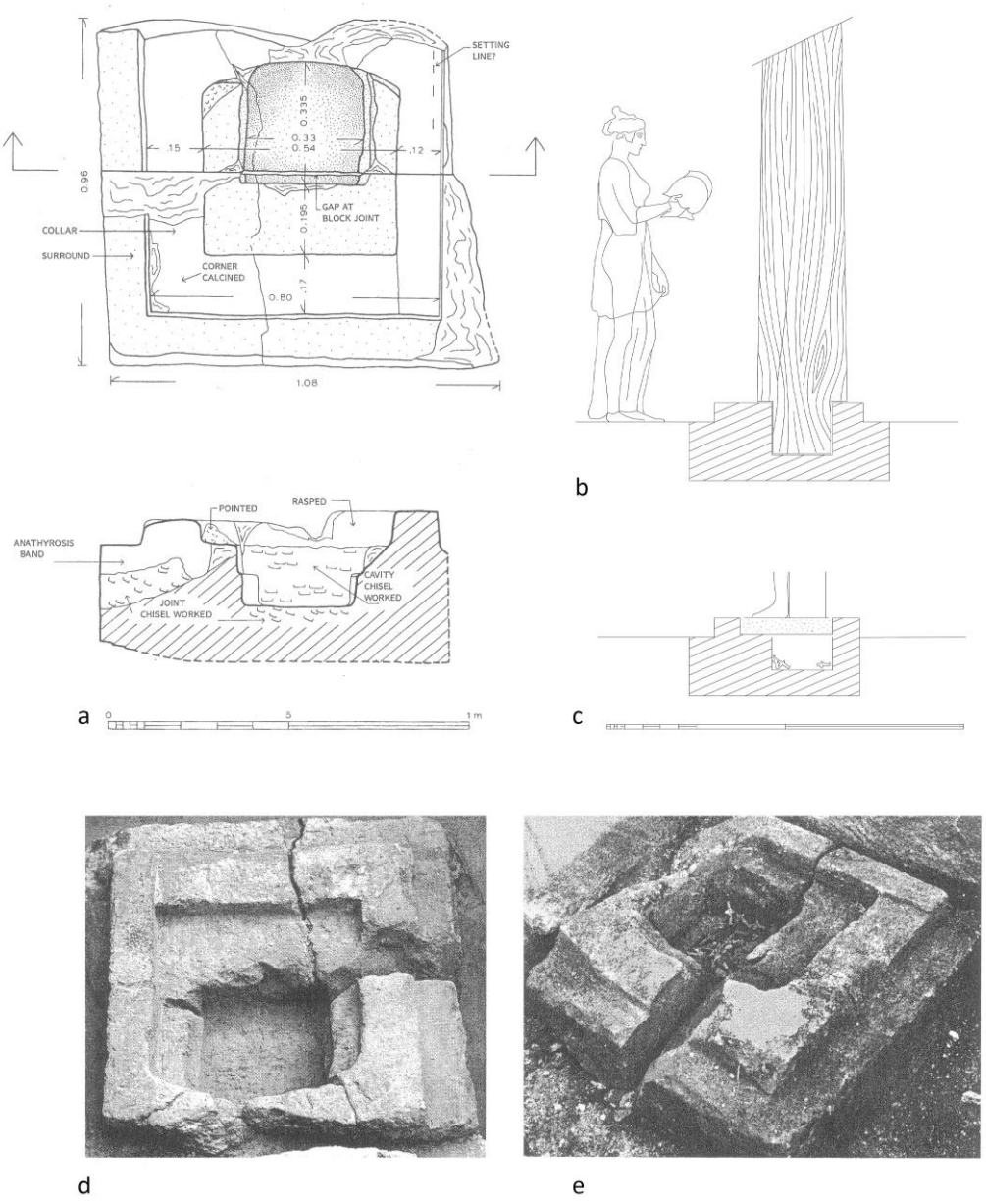


Fig. 4.18: The base for the ancient wooden column on the Mycenaean bastion.

Unfortunately, no traces of the possible dedication on top survive, thus creating difficulties for dating, but the condition of the base and the situation at Athens narrows the possibilities. Based on the tool-marks visible on the surface, Ira Mark suggests a date before 560 BC for the original use as a base.[112] The end

[112] 560 BC is the latest possible date as suggested by Mark but an earlier date is preferred. As reason to date the block to the beginning of the 6th century BC Mark argues with the introduction of marble for sculptures at Athens. Assuming that the base did not support a sculpture (especially not made of marble) but a free-standing wooden object in first instance opens the possibility for a date in the 7th century BC. Mark, Ira S. (1993): 28.

of the base's initial function is defined by the construction of the *pre-naiskos* during the early part of the 5th century BC.[113] The replacement of the column with a statue cannot have occurred later than the erection of this building.[114] Considering that the base supported a monumental wooden shaft, a date in the 7th century BC seems plausible, possibly even towards the beginning of this century. It may be suggested that the column originally elevated a female goddess. This could have been the "wingless goddess" for which the sanctuary was famous, as Pausanias documents a ξόανον (a wooden statue) of such a divinity.[115] Placing this ancient wooden icon on a prominent location such as a monumental free-standing column would increase its visibility and therefore its reputation. Nevertheless, this column was not standing at the time Pausanias visited the site, and so the 'ancient' statue he describes, which once may have stood on a column, must have been relocated, perhaps inside the Nike temple. [116]

During the middle of the 6th century BC an extensive building program on the *acropolis* led to the construction of at least two large temples. With a total height of at least five metres, this free-standing column was probably one of the tallest dedications of the time prior to the completion of these buildings. From the

[113] The construction of the *pre-naiskos* is dated to the beginning of the 5th century BC. This building was located in the sanctuary, which "included in the early 6th century probably only an altar and an icon of the goddess". Later, with the construction of the *naiskos*, the Nike-Pyrgos was raised, an action which finally covered the Mycenaean bastion. Gruben, Gottfried (2001): 203-205.

[114] This date is supported by Scholl, who suggest a long use for the terracotta figurines, dated to the 1st half of the 7th century BC. These may have been kept at a different location inside the sanctuary and, according to Greek custom, had to remain in the property of the Goddess. Scholl, Andreas (2006): 40.

[115] Pausanias, *Descriptions of Greece*. 3.15.7 and 5.26.6.

[116] Pausanias mentions that the statue is old and from his viewpoint, this would include a sculpture dating to the 5th century BC. According to normal Greek practice however if it were 5th c. workmanship, it would most likely be made of stone or bronze, not timber. A wooden icon of old could still have remained inside the sanctuary at some position for Pausanias to see it and a dry place inside the building allowing it to survive. In fact several heirlooms in Greek sanctuaries were believed by ancient writers to date to fabulous times, despite being made of perishable material. One such object is a linen cuirass, dedicated by Amasis (570-526 BC) in the sanctuary of Athena at Lindos, as is testified by Herodotus and repeated later by Pliny the Elder. Shaya (2005): for Herodotus see page 432, for Pliny see page 435; Herodotus, *Historia*: 3.47; Pliny the Elder, *Naturalis Historæ*: 19.2. 11-13.

7th century BC onwards, it was this column, with its prominent location on top of the Mycenaean bastion flanking the way up to the *acropolis*, which guided the worshipper up to the sanctuary, thus enhancing the cultic value of free-standing marker in Greek antiquity.[117]

Athens: The Kekropion

The earliest temple on top of the *acropolis* that can be reconstructed dates to the second quarter of the 6th century BC (Fig. 4.19).[118] As Jeffrey Hurwit states, this was the first "truly monumental temple to their goddess", although compared to the great temples from Ephesos and Samos, this building was of a modest size.[119] However, its location is uncertain and at least two alternatives are possible. In fact, a building has to be assumed for both locations; albeit controversy reigns over which building was erected on top of which foundations.[120] But these temples were not alone, plenty of dedications can be presumed. Apart from the large free-standing wooden column at the Nike site (which was still standing at this period), countless fragments of

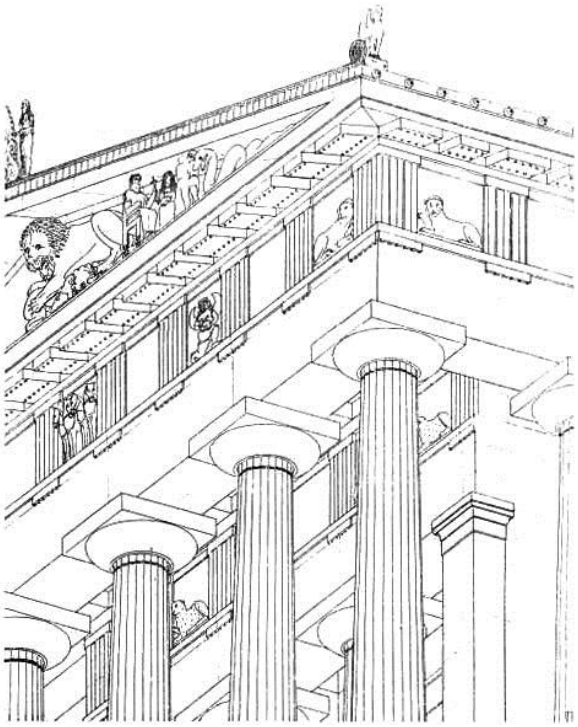


Fig. 4.19: Isometric drawing of the corner of "Building H", Athens.

[117] A free-standing column, erected at such a location, matches exactly the proposal for soaring columns of antiquity as described by Phoebe Segal.

[118] Until now, the situation concerning the Geometric and Archaic periods on top of the *acropolis* at Athens has not been satisfactorily worked out. Most especially problematic is where the two main temples in the Archaic period stood. Manolis Korres has recently revived an argument originally made by Dinsmoor in which the so-called Original Parthenon (or Building H), was located underneath the Parthenon and the second building, the Old-Athena temple, is positioned on top of the so called Dörpfeld foundations. (lecture held at the National Hellenic Research Foundation).

[119] Modest indeed, the temple of Hera at Samos measured roughly six times the size of the temple of Athena. Hurwit, Jeffrey M. (1999): 106-107; Bammer, Anton (2004): 31.

[120] For detail see Schneider, Lambert (1990); Gruben, G. (2001): 170; Scholl, Andreas (2007).

free-standing columns have been discovered on the *Acropolis*.[121] Most of these were evidently small but, as already mentioned in the introduction, the site also contained the remains of a Doric column of at least 6.70 metres in height.[122] Indeed, this columnar monument, though of considerable height, is not the tallest free-standing column at the site.

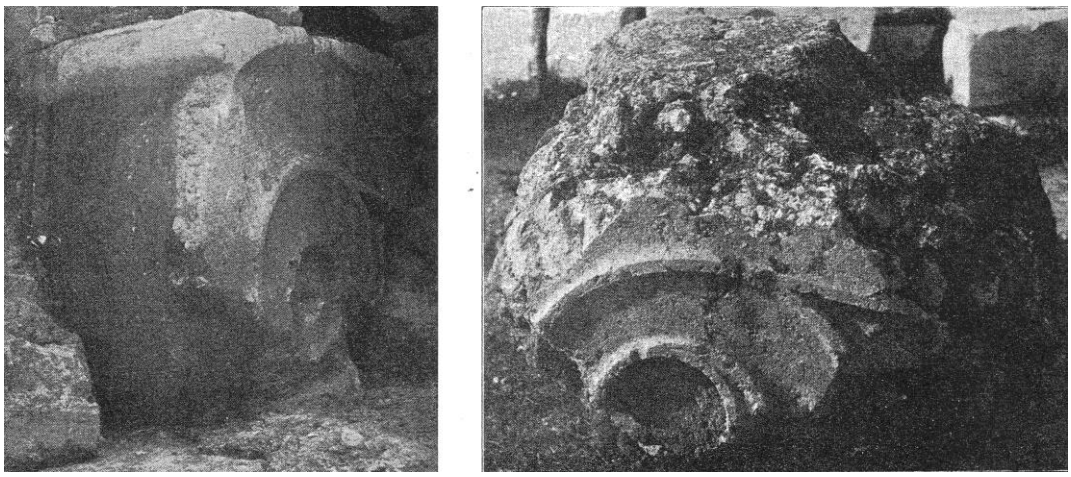


Fig. 4.20: The fragments of the large Ionic column capital from Athens.

This first monumental temple has been considered by various scholars to be the Old-Athena temple or *Hekatompedon*. It is reconstructed as a building of the Doric style with the foundations surviving, measuring 20 m at the front 40 m length (Fig. 4.16c).[123] The covering of the roof is certain, several fragments of the pediment (including their sculptures) were found, showing that the building was tiled.[124] Less certain is the design of the building, either it was a *peripteral*, as supported by Manolis Korres (Fig. 4.19), or a *prostyle* construction.[125] A *peripteros* could come up to eleven metres but, as the design is relevant for the

[121] For fragments of free-standing dedications of the *acropolis* see: Raubitschek, Anton (1939); Kissas, Konstantinos (2000). For a catalogue of Archaic Ionic capitals in Greece, including Athenian volute capitals see: Bakker, Karel A. (1999).

[122] Heberdey, Rudolf (1919): 136.

[123] Hurwit, Jeffrey M. (1999): 107; Dörpfeld, Wilhelm (1887): 190-211; Neils, Jenifer (2005).

[124] With a slope of 14º the roof is relatively low therefore reducing the spatial presence of the building.

[125] According to the information available both alternatives remain possible. This situation makes estimating the height of the temple difficult especially since most publications concentrate on the sculptures of the pediment. Scholl, Andreas (2007): 23; Beyer, Immo (1974): 639-51.

spatial presence of the building, due to the reduced span of a *prostylos* it could also have been significantly lower. Bearing this in mind it is instructive to turn to the nearby monumental free-standing column, of which two fragments have been discovered (Fig. 4.20). Moreover, a potential foundation location can be identified, which would be ideal for a heavy and tall monument. To the north of the proposed spot for the Old-Athena temple, a square stone foundation of about 4 m^2 in area can be located that reaches down to the bedrock and is therefore capable of supporting the weight of a monumental column.[126] This spot immediately neighbours the site of the designated tomb for Kekrops, the mythological second king of Attica (Fig. 4.16b).

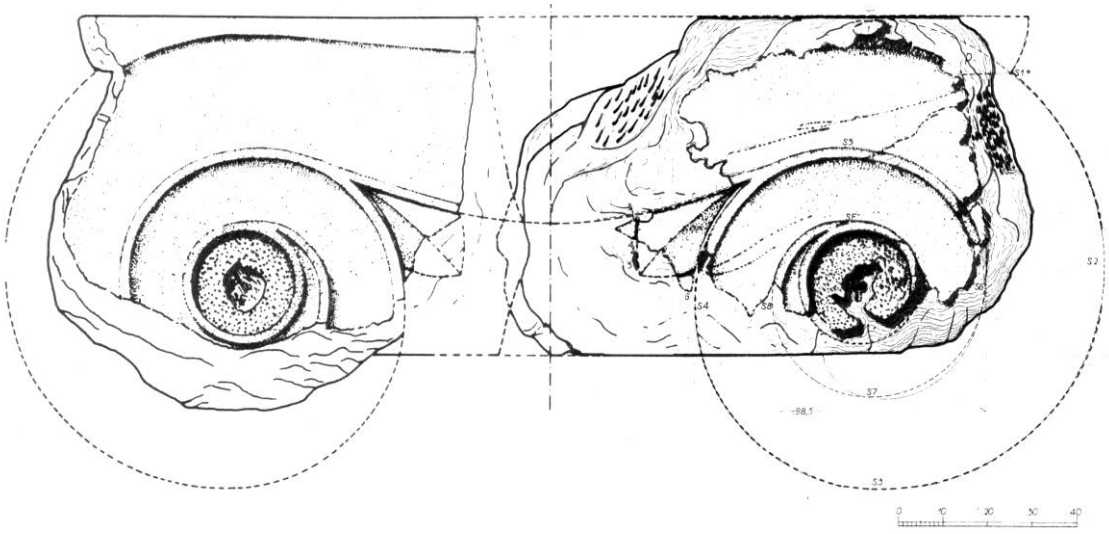


Fig. 4.21: Both fragments of the gigantic Ionic column capital combined, as drawn by Korres.

The two fragments combine to create a gigantic Ionic capital (Fig. 4.21).[127] When it was discovered, a free-standing column of this size went against the general consensus of the time and so other purposes for the two fragments were suggested.[128] Nonetheless, Theodor Wiegand preferred the interpretation as a free-standing column, but he also considered that the volutes could have decorated an

[126] Korres, Manolis (1997): 104.

[127] Korres, Manolis (1997): 95.

[128] For the discussion about the probability of monumental free-standing columns on top of the acropolis see the introduction and Wiegand, Theodor (1904): 18; Heberdey, Rudolf (1919): 137.

altar.[129] The reason for doubts regarding its purpose becomes evident in Korres' investigation. The abacus alone measures about 2.5 m and the capital reaches a weight of 4½ tons.[130] The only columns of that period which almost reached this size can be found at the temple of Artemis at Ephesos (dating to the middle of the 6th century BC). Judging from stylistic traits and material (the use of *poros* instead of marble) Korres favours a date shortly after the erection of the columns of the great *dipteros*, a date towards the last quarter of the 6th century BC.[131]

Assessing the height of the column has the difficulty that not a single free-standing column of this size has been associated with this period in Athens. The only structures of comparable size are the gigantic columns of the *peristasis* of the Older Artemision at Ephesos, although it is feasible that the monument at Athens might have been even taller. To date, this column is the tallest free-standing column known from Greek antiquity. The earliest building-integrated columns to exceed its height were those of the 2nd *Dipteros* (of Polycrates) at Samos, a construction that is roughly coeval. Korres suggests a lower column diameter for the monument of about 1.4 m, leading to a minimum possible height of 11 m for the column.[132] Considering the proportions of the column of the Naxians at Delphi (10.7 times the lower diameter) and the Sphinx column of Aphaia at Aegina (9.7 to approximately 11 times the lower diameter), the column can be significantly taller; up to 16 m.[133] As a dedicational column it is also expected to carry a

[129] Wiegand prefers the use as a capital, a daring proposal for the early 20th century AD. The courageous character of this proposal becomes clear by Heberdey's response. Wiegand, Theodor (1904): 173; Kissas, Konstantinos (2000): 23.

[130] The dimensions of this column are phenomenal indeed and without any comparison on the Greek mainland. Korres, Manolis (1997): 100.

[131] The material would be unusual for a capital from the Athenian *Acropolis* in the 5th century BC and an earlier date is likely. Korres concludes that: "the use of *poros* instead of marble does not fit easily into the period after 490…". Korres, Manolis (1997): 100.

[132] Ionic columns tend to be slender; a height of 10 times its lower column diameter is common. One of the most slender proportions for this style can be found in the interior columns of the Oikos of the Naxians at Delos, according to Gruben, these supports reach 13 times the height of the columns lower diameter. Weber, B. (1996): 87; Gruben, G. (1965): 131.

[133] Similar to most free-standing columns of the Archaic period, the height of the monument is based on the proportions of the column of the Naxiens at Delphi. The upper shaft diameter of Kekrops' monument measures 1.27 m (Delphi equals 12.48 times this measurement), leading to a height of about 15.85 m. White, D. (1971): 53.

dedication, creating a gigantic monument that would be taller than any temple nearby. Though no object has yet been associated matching the dimensions, the imagery of a Sphinx is a suitable suggestion. An alternative to a winged feline is the statue of a female, a regular combination for free-standing columns at Athens.[134] For such a female statue (perhaps Athena herself) another 3 meters have to be estimated. This would have created an appropriate predecessor for the statue of Athena Promachos, which was placed on the ground at a similar location about one century later (Fig. 4.22).[135]

Considering the date of construction, the erection of a monumental column of such a scale is indeed remarkable. Buildings of this time had already reached phenomenal dimensions, and most sanctuaries had some construction of decent size. Despite already having at least one temple of considerable height, the Athenians went one step further in constructing this gigantic free-standing column. The presence of this monument provides confirmation, if any is needed, of the importance of columnar dedications in general during antiquity. It was after the completion of this gigantic columnar monument that the Athenians advanced to the next stage of architectural design. A large temple, the Pre-Parthenon, was planned and its foundations were laid. The construction of this building was a lengthy endeavour which was never completed. Nevertheless, during the construction of this building, the votive column remained the dominant dedication, looking down at the progress of this temple. The abrupt abandonment this project came when the Persians razed the *acropolis*, a disaster to which the column also probably fell victim. Greece emerged victorious from this war and after some decades the temple was rebuilt: a magnificent temple crafted entirely out of marble. As also occurred at Samos and Ephesos, dedications remained important for sanctuaries during the 5th century BC, but were later received rather as essential accessory (as "nothwendiges Beiwerk" in Gottfried Sempers words)

[134] The column not necessarily elevated a statue of Athena esp. since it marked (?) the tomb of Kekrops. Bakker, Karel A. (1999): Ion36, Ion 62, Ion 76; Korres, M. (1994): 174; Raubitschek, A. (1939): fig 1, fig 4; Puchstein, O. (1887): fig 6.

[135] The enormous statue of Athena was crafted by Phidias and erected after the Persian invasion. Its size overlooked the *Propylaeum* and challenged the *Parthenon* in height.

than as centre of attention. The monumental free-standing column became secondary to a majestic temple whose fame is such as to make most people remember its columns only.

Fig. 4.22: View at the *acropolis* after Leo von Klenze (1846).

***

Summary, Chapter IV

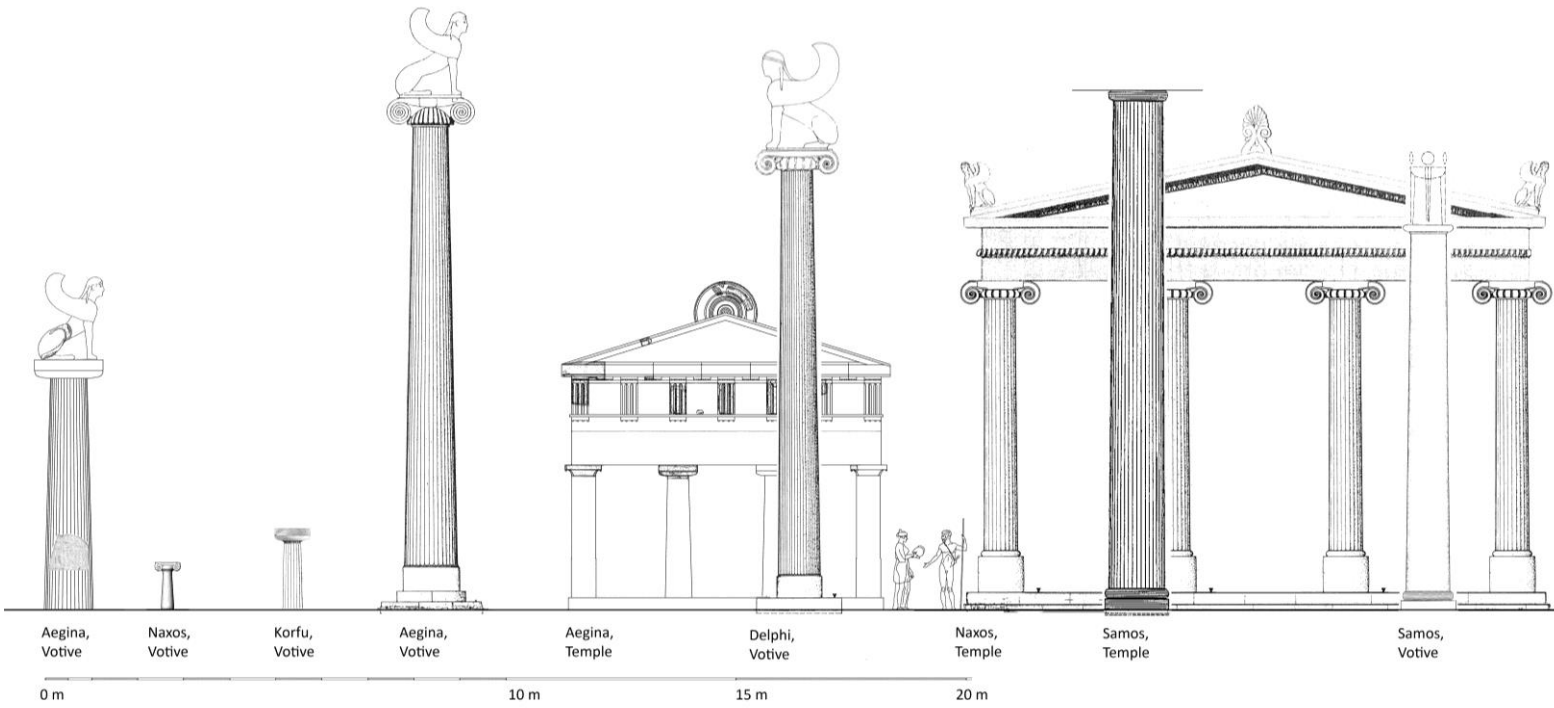
Following the archaeological evidence, it is possible to sketch the development of free-standing columns in relation to the other main architectural elements within the sanctuary, the buildings. As is apparent from a consideration of their scale, columnar dedications must have played a significant role in the development of sanctuaries, and so perhaps also in the genesis of Greek architectural ornaments.

The earliest trace of a massive free-standing column made in stone can be dated to the last quarter of the 7th century BC, a time for which the presence of a monumental temple, or even a temple at all, is unconfirmed for many sanctuaries. As a support for offerings, votive columns were likely to be terminated with capitals of a design similar to columns in a building integrated context. In formal terms purposes were similar. It was not only a question of the capital providing a larger bearing surface than a simple shaft, as was needed to support both large dedications or an entablature. The capital was also the element articulating the end of the shaft, and as such visually prominent and vital to the aesthetic success of the column.

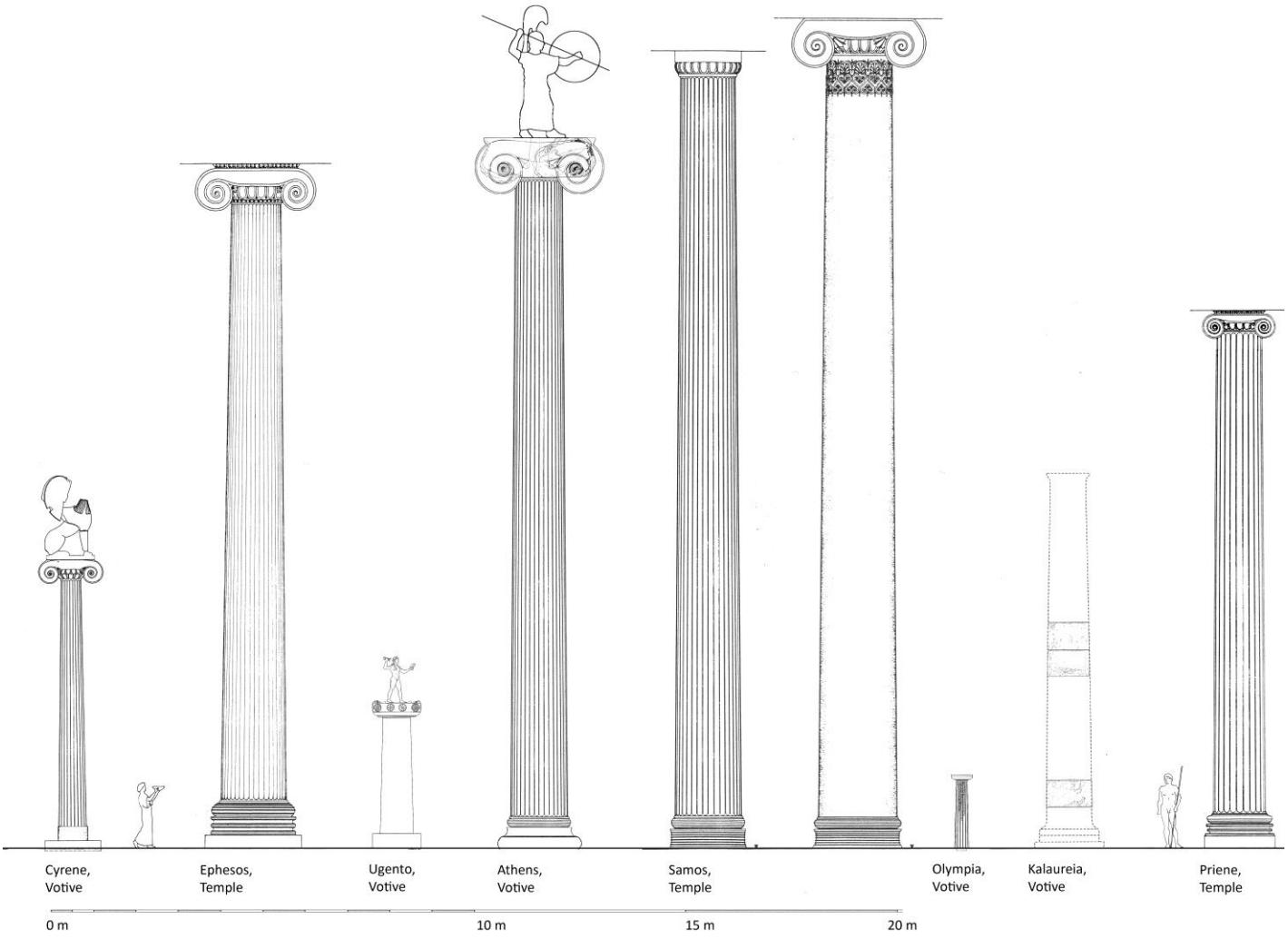
The archaeological evidence shows that free-standing columns, at the beginning of the Archaic period, were taller than columns in buildings. In fact, votive columns could also be significantly taller than the entire building. In the most extreme cases, votive columns reached about twice the height of the tallest building at the sites documented. These columns (in both wood and stone) were significant forerunners of building construction, since a correlation exists between the increase in the size of the columns and the subsequent increase in the size of buildings. While temples compete for height, votive columns also continued to grow, remaining the tallest construction in some sanctuaries until their dominance came to an end around the middle of the 6th century BC, with the construction of the two gigantic temples at Samos and Ephesos and then those at Selinunte and Agrigento. Even after this breakthrough in engineering, monumental free-standing columns remained popular, and sanctuaries can be identified that maintained the

traditional hierarchy. The Athenian *acropolis* is a case in point where the column of Kekrops was the tallest feature. The construction of monumental free-standing columns was obviously of some historical value to Greek culture, but apart from this, a financial reason can also be identified. Considering the cost of the on-going building programs of the 6th century BC, it was less expensive to erect a singular soaring column which then claimed the highest point in a sanctuary and made it visible from afar.

In conclusion, soaring columns were significant elements of early sanctuaries and similarly for large temples, monumental stone columns must also have had predecessors, whether foreign examples or local ones made from timber. Traces of wooden columns can be identified, ensuring their existence. Limited in height by technological advances, temples and other buildings (as well as various kinds of dedications), accumulated at the lower level of elevation. Occasionally, a votive column would stand out, with a height that easily distinguished it from the many other offerings.



The impact of soaring columns for the development of architecture cannot be underestimated. It can only be guessed whether or not the ornament applied to ancestral wooden free-standing columns would have displayed the same styles as seen on later columns but, without doubt, it can be demonstrated that free-standing columns were the first constructions to reach monumental height. As prestigious dedications, it may also be noted that free-standing columns formed an ideal medium in which to develop the ornament for which architecture became known during the following millennia.



Discussion: The significance of free-standing columns

"All greatness is unconscious, or it is little and naught."
Thomas Carlyle[1]

This thesis raises the question whether the architectural ornament so famously displayed on columnar building components was necessarily devised for this context. The implications of this study are such that it is reasonable to suggest that the orders were derived as much from votive columns as they were from building-integrated columns.[2] Such a proposition can be supported by the heritage of free-standing elements formed from wood, a tradition that can be documented as far back as the beginning of Greek sanctuaries. A wooden ancestry for Greek votive columns, either forced firmly into the ground or placed into stone-bases, should also follow the natural progression of construction – from small to large, from wood to stone.[3] Even though the time when the ornamented column appeared in Greek sanctuaries is not known (nor where it actually came from), after it was successfully introduced, the "greatness" it came to convey was perhaps not yet clear or, as Thomas Carlyle articulates it, "unconscious". The full potential of the column was to be reached later, with its (structural) incorporation into the *peristasis* of Greek temples. For its early stages a different purpose for the ornamented column is more likely, i.e. as part of the sacred 'furniture' of sanctuaries, as the support of individual dedications.[4]

---

[1] Carlyle, Thomas (1838): Sir Walter Scott *The Harvard Classics* paras. 21

[2] This theory stands in contrast to the current interpretation of the origin of the column as architectural element. For the detailed discussion see the introduction, especially figure 0.3.

[3] This development can be traced with great certainty for Greek architecture. For detail see Gruben, G (2001); Barlettta, B. (2000); Hellmann, M.-C. (2002); Drerup, H. (1969); Wilson Jones, M. (forthcoming)

[4] Although, the initial purpose of the two objects (free-standing columnar donations and the cultic element of a temple) might not be that different. The temple itself can also be addressed as an offering to the divinity; this was already articulated by Karl Bötticher, who states the temple forms an 'ἀνάθημα'. Bötticher (1851): introduction 20. For further discussion see: Wilson Jones (forthcoming).

Pursuing this alternative history of the column and the decoration that goes with it has major implications for the emergence of the orders. As outlined in the introduction, the structural materialist explanation for the genesis of the capital still forms the dominant theory regarding perhaps the most iconic of all architectural components. This theory presumes that ornament is related to structural gravitas and therefore must have originated in a building integrated context. However, the lineage of the column reaches deep into history and is not exclusive to Greek culture, nor is it exclusive to buildings. Chapter I shows that these markers were known to several prominent cultures prior to the Greeks; therefore, by no means, can these be seen as a Greek invention. Since contact between Greece and these civilizations was established (at least from the 8th century BC onwards), their artistic output must have been influential. The free-standing column was a symbol of divine or secular power, and occupied a special position in the development of early religious cultures. These columns were often richly ornamented and crafted from precious materials to emphasize their importance.

This is also the case for columnar markers in the Greek context. A range of materials is documented in the literature, as demonstrated in chapter II. The texts compiled show that the free-standing column formed part of ancient Greek customs, and also that timber was frequently used in early times. The visual characteristics of early free-standing columns can meanwhile be obtained from their representation on pottery and other media, an analysis performed in chapter III. The assembled illustrations indicate that such columns enjoyed great popularity. The ornaments applied to their capitals are as varied as the dedications on top, though Doric and Ionic predominated. The investigation of archaeological remains also suggests that columnar dedications dwarfed other elements in sanctuaries. This occurred in the early periods at least, and can be observed from fragments of stone votive columns dated to the beginning of the 6th century BC, as demonstrated in chapter IV. Comparing the development of free-standing columns and building integrated columns suggests, furthermore, that the former developed earlier. Even if the numbers of surviving artifacts of both kinds are scarce, it

seems significant that several votive Ionic columns are known (Sangri, Delphi, Aegina) before the earliest Ionic temple (Yria).

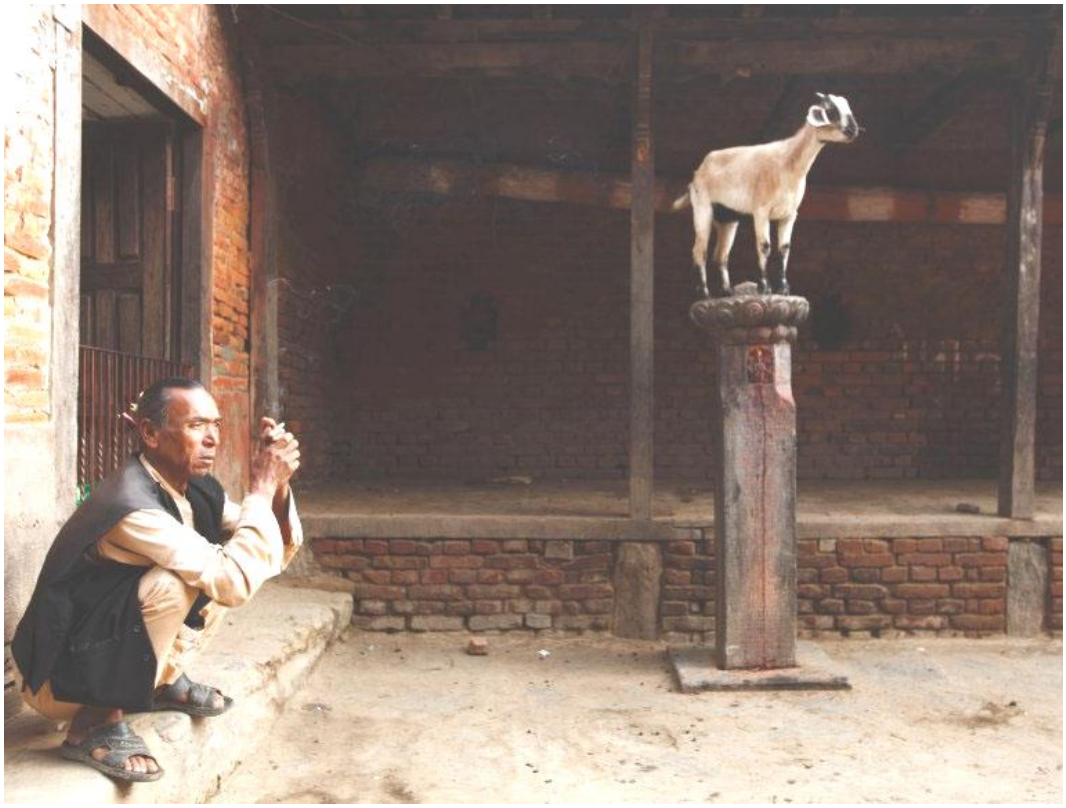


Fig. 5.1: Goat on a free-standing wooden column at the sacred precinct of Khokana, Nepal.

It can be suggested that, as man-made structures, columns used as dedicational markers were not invented in monumental sizes, but rather grew in size over time. As for buildings, a certain development in both the size of the column and the durability of materials used has to be considered. The starting point for this evolution is likely to predate the first archaeologically accessible monuments, and as the earliest constructions would have been made from perishable materials, no such artifacts remain. In spite of its poor durability, timber was certainly used, as is indicated by the surfaces of columnar components of stone, and is also confirmed by ancient literature. As a natural material, timber

is easy to work with and appears in several cultures used for this context (Fig. 5.1).[5]

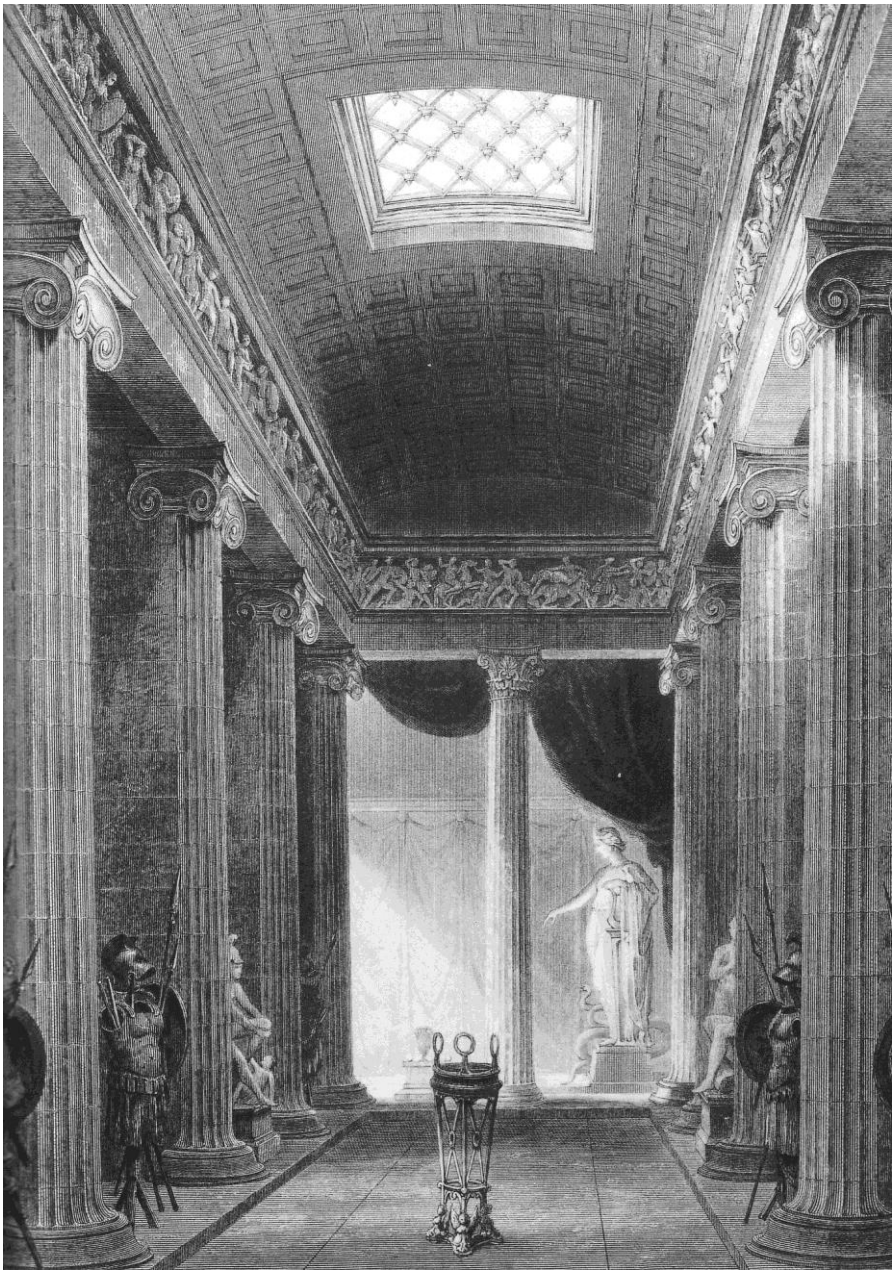


Fig. 5.2: The inside of the temple of Apollo at Bassae after Hittorf.

[5] The sacred district of the Nepalese village Khokana is dedicated to a female divinity (a Mother Goddess) and has a temple to her name. The ornament used at Khokana cannot be used as example for the use of ornament in Greek antiquity but the similarity of certain patterns and techniques of these two cultures is striking. The existence of a free-standing wooden column has to be seen as a definite argument in favour of their structural stability. For a discussion on the similarities of ornament in different cultures see: Riegl, Alois (1893); for similarities in objects see: Wilson Jones (forthcoming).

Thus there is sufficient evidence to set against the popular theory associated with statements of Vitruvius to the effect that the 'orders' originated from a building-integrated context.[6] Architecture generally follows a gradual development; a careful, bit-by-bit introduction of new designs but borrowing from abroad can short-circuit or accelerate development. This process also seems to apply to the ornamentation used for columns, as can be observed with the last of the three great architectural 'orders'. After the Corinthian capital first found its way into a building, it took a long time before its victory over the other 'orders' during the Roman period.[7] The temple of Apollo at Bassae is generally considered to be the first building to incorporate this style.[8] The *peristasis* of this construction is of Doric style, with the majority of the columns on the inside being Ionic. Only a single column was Corinthian and thus highlighting the end of the *naos* (Fig 5.2).[9] Despite the archaeological documentation of the 'new' design as part of a building, fragments exist indicating that important aspects of the design had already been pioneered in the context of funerary stelai and bronze objects.[10]

Although the information about the sacred furniture of early Greek cult spaces is limited, a development as the Corinthian might be exemplary. It is known that buildings before the beginning of the 7th century BC, a time before stone had become the canonical construction material, were made of perishable material, and so of a relatively "modest" size, to use the word of Gottfried

[6] Vitruvius IV 1.3. See introduction.

[7] Wilson Jones (2000): ch. 7.

[8] Gruben, Gottfried (2001): 133.

[9] By being the only column of a different design, the Corinthian style comprises a special position within the building. Despite being the most frequently used design of later periods, this first b(building-integrated) appearance of the design is more alike cultic icons or sculpture - indicating the prominence of columns, than the repeated use of an architectural component. Hittorf J. -I. (1870); Yalouris N. (1967); Gruben Gottfried (2001): 134.

[10] A few Corinthianizing capitals (without the characteristic acanthus) have been discovered in Greece, predating the construction of the temple of Apollo at Bassae. The existence of this ornament, dated prior to the lifetime of Callimachus questions the 'invention' of this design by Callimachus and therefore the genesis of this 'order' as described by Vitruvius. For the 'invention' of the Corinthian 'order' see: Vitruvius. IV 1.9; for detail on the genesis of the Corinthian capital see: Scahill David (2009); Wilson Jones (2000): ch. 7; (forthcoming): ch. 6.

Gruben.[11] Wooden free-standing columns on the other hand are likely on some occasions to have extended to monumental heights, dwarfing their environment. Prior to the practice of monumentality in Greek construction, it can be assumed that wooden columns of moderate heights were significant sacred elements in sanctuaries.[12] As regards still open questions about the genesis of the 'orders', it can be proposed that the free-standing column is the starting point for columnar ornaments (expressed mainly in the styles of the capitals), as in Greece, it achieved monumental proportions before any building.

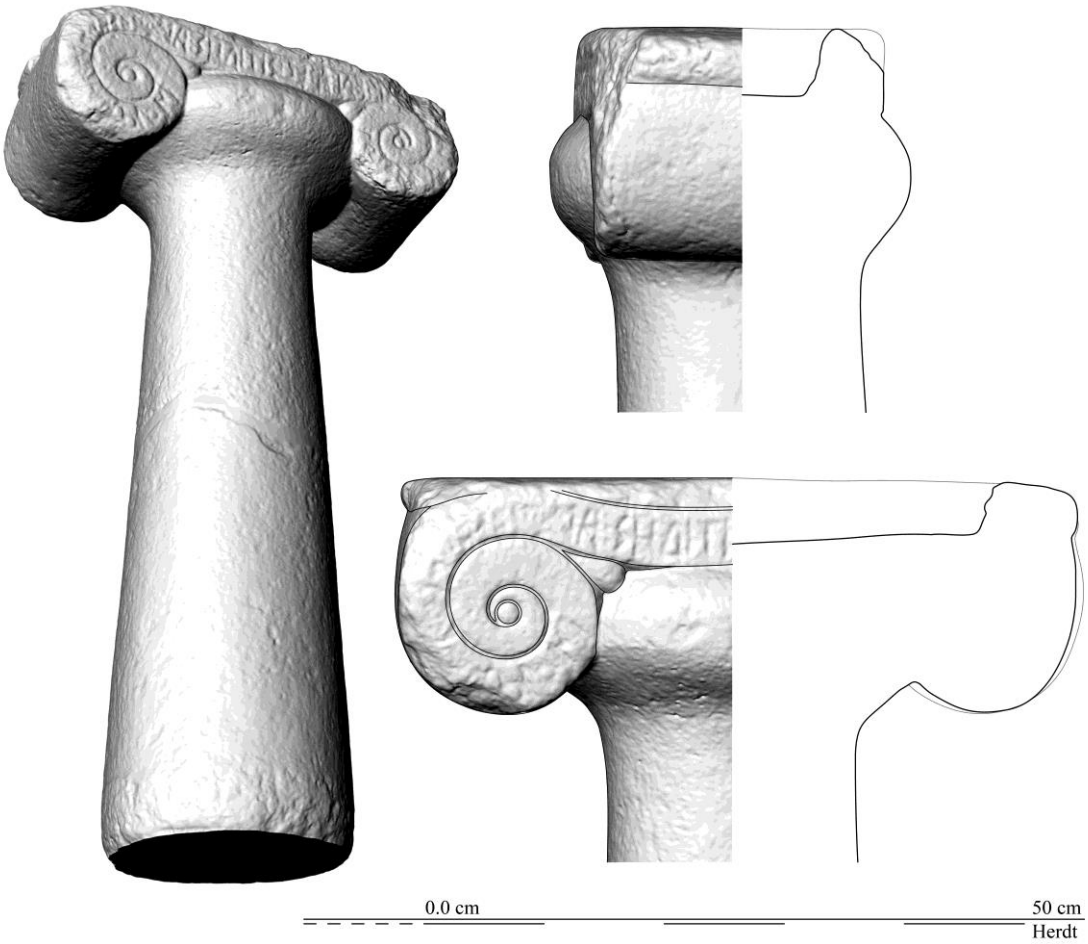


Fig. 5.3: The oldest marble volute capital, free-standing monument of Alextides, Naxos.

[11] The term used by Gruben is "Bescheiden" (Modest), a very polite term for an architect to describe the relationship between the two elements. Gruben, Gottfried (2001): 157.

[12] As explained in chapter IV, archaeological evidence for buildings of this period is rare.

The development suggests that experimentation occurred in the context of free-standing columns, and indeed it is logical to suppose that this was the case; it is easier to experiment on a single object then a set of 4, 6 or more, as required for a whole building (considering also the need to marry in with entablature design and loading constraints). In fact, a review of the range of design solutions for Archaic columns shows that greater variety is shown on votive examples, e.g. those of Cyrene, Oropos, Delos etc.[13] The innovative character of this element becomes apparent with the "oldest marble volute-capital" discovered so far, that of Sangri (Fig. 5.3).[14] It is not the height of this columnar marker that makes it special, nevertheless it was erected at a crucial moment in architectural history, the advent of marble as a construction material. Masons first had to gain experience in how to craft this new and extremely durable material. As Gruben notes; "… the free execution of the four volutes has to be seen as indication of the first, yet unaccomplished, attempts of Geometric times to shape marble…".[15] Unsurprisingly, the element of a singular column – a votive – was the object of experimentation.[16] This new material was fashioned into a familiar design (the Ionic volutes in this case), although this design was not yet in its canonical form. That craftsmen were not accustomed to the new material becomes clear by observing the quality of the surfaces, as they indicated an experimental stage, a characteristic that this small column shares with the early Ionic capital of the monumental column at Aegina; both display tool marks and a carving technique that is associated with a softer material, that is to say timber.[17] Therefore artists of this time were not familiar with stone – especially marble - as a 'new' material. This further suggests that a wooden predecessor for this design existed. Perhaps

[13] For detail see appendix II.

[14] As addressed by Gottfried Gruben in his article of the same title "Das älteste marmorne Volutenkapitell" of 1989. The small column (about one meter height) is dated by its inscription to the late 7th century BC. The elongated socket at the top indicates a feline (a Sphinx) as crowning element, even though no matching fragment has been found. Herdt, Wilson Jones (2008): 246-249, figs 1, 3 and 4; Bakker, K. A. (1999): Ion-1; Gruben, G. (1989).

[15] "… die freie Gestaltung der vier Voluten sind wohl als Indizien der ersten noch unbewältigten Versuche geometrischer Gestaltung des Marmors zu werten, …". Gruben, Gottfried (1989): 165.

[16] The production of a free-standing object is not only a smaller venture, compared to a temple, repeating the same design is also not require due to its singularity.

[17] According to Gruben, the surface of the monumental Ionic column of the Aphaia sanctuary display characteristic imprints of tools used for working timber. Gruben (1965): 125.

Greek architects were not able to, or at least did not dare to embark upon, the more complex enterprise of an entire building made from such an unfamiliar material as marble. It may be postulated that after crafting with stone was successfully accomplished, temples could be fabricated from stone; and after cutting marble proved to be possible, temples were made from this material.

Columnar markers made of perishable materials were erected for the purpose of supporting a dedication. By being part of the dedication, these markers were not just undecorated pillars but were decorated with ornament. At the time the first buildings were introduced to sanctuaries, these were also made of perishable materials. As with any component of a sanctuary, buildings also had to reflect sacredness. To achieve such a delicate task, the building was decorated with the same ornament as other components with sacred overtones.[18] As soon as stone became available as a durable material, perhaps free-standing columns began to be constructed from it, followed by buildings; as monumentality became an option, free-standing columns started to grow in size, again followed by buildings (as illustrated in chapter IV).

Once the monumental building became established the later evolution of Greek column design happened almost exclusively in this context, creating the impression that the genesis of the 'orders' was attributable to temples. Nevertheless, this association is also correct in many ways. As individual donations were found in a variety of styles, there was never a need to consolidate a canon. It was the repetition of that ancient and most familiar ornament for the purpose of the *peristasis* which finally shaped the 'orders' as they are known today. The primacy of free-standing columns in sanctuaries ended with the construction of the two gigantic *dipteroi* at Samos and Ephesus (Fig. 0.9). These two monumental structures represented a physical limit that could not be exceeded by singular donations, resulting in an impediment to their development. Some wealthy donors preferred to dedicate several columns for the completion of such a temple, rather than sponsoring a single monumental dedication to the

[18] Wilson Jones (forthcoming).

sanctuary.[19] This shift of focus led to the understanding that the temple represents the most significant dedication, as is implied by Vitruvius' *de architectura libri decem*, a treatise written centuries after the shift happened. Surpassing the height of such huge temples was only occasionally achieved later by individual columns, for example that of Kekrops on the Acropolis at Athens.

The dominance of the temple was not contested during the following centuries. But the concept of erecting free-standing columns did not disappear; it witnessed a revival in Rome, though the emphasis shifted to honorific purposes. In the 2nd century AD, a monumental columnar marker was built in honor of the emperor Trajan, displaying all the major characteristics of a column such as a base, shaft and capital (Fig. 5.4).[20] Following the fashion of the Roman period, all of these elements are richly ornamented, the *torus* is decorated with a foliate scheme, the shaft displays an extraordinary 200 m long relief, and the lobed disc at the top resembles the Doric *echinus*. Equally impressive is the height of the monument, which reaches 35 m – a formidable size for a free-standing column.[21] In fact, this was more than just a column, a monument to be entered. The building is a hybrid: a stair tower, following the proportions and appearance of a

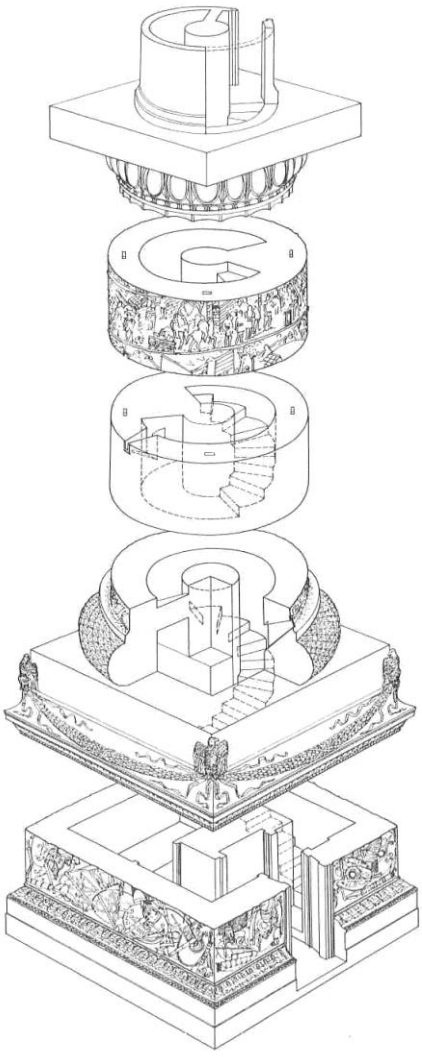


Fig. 5.4: Explosion drawing of Trajan's column, Rome.

[19] As documented by Herodotus, the 2nd *dipteros* at Ephesus required a large endorsement of Croesus in order to continue the construction; Herodotus I 92-1; for sequence in construction (of the Athena temple at Priene) see: Hennemeyer, A. (2006); Gruben, G. (2001): 412.

[20] Wilson Jones (2000): 165, fig. 8.8.

[21] The top of this marker was crowned with a sculpture of Trajan, the victorious hero of the tale documented by the relief. Wilson Jones (2000): 161-174.

column.[22] Still, this innovative victory monument, at core, resembles the free-standing dedicational columns of earlier times. Columnar forms once again took on the challenge of increasing height. This victory monument is seminal for the development of even taller structures in later centuries. One of the tallest ever constructed is the victory monument of the Prussian Wars in Berlin, the *Siegessäule*. Completed in 1873 AD, this reaches a staggering height of 67 metres.[23]

Having observed the emergence of Greek columnar ornamentation, it is clear that the importance of free-standing columns should not be underestimated. Free-standing posts made of timber can be seen as forerunners of architectural fashion, at a time when buildings were still in their infancy. As the dominant elements in many early Greek sanctuaries, single columns must also have played a significant role in the continuing progress of architectural design. The evolution of free-standing columns offers an alternative for the genesis of architectural ornaments solely in the context of buildings. In fact, there is a real possibility that the design of Greek columns were pioneered for free-standing sacred offerings. After all, the column was a major expression of power and beauty for most cultures prior to the Greeks, and also for the Greeks themselves.

***

[22] In order to reach gigantic height, the lower column diameter measures about 3.7 m, which is enough to fit a staircase leading to a platform at the top.

[23] The monumental column in Berlin is, with nearly 67 meters (including the sculpture of *Victory* on top), in the group of the tallest columnar marker ever erected. Also to this category belongs the "Monument" at London, a Doric column of 61 m in height, also equipped with a staircase inside.

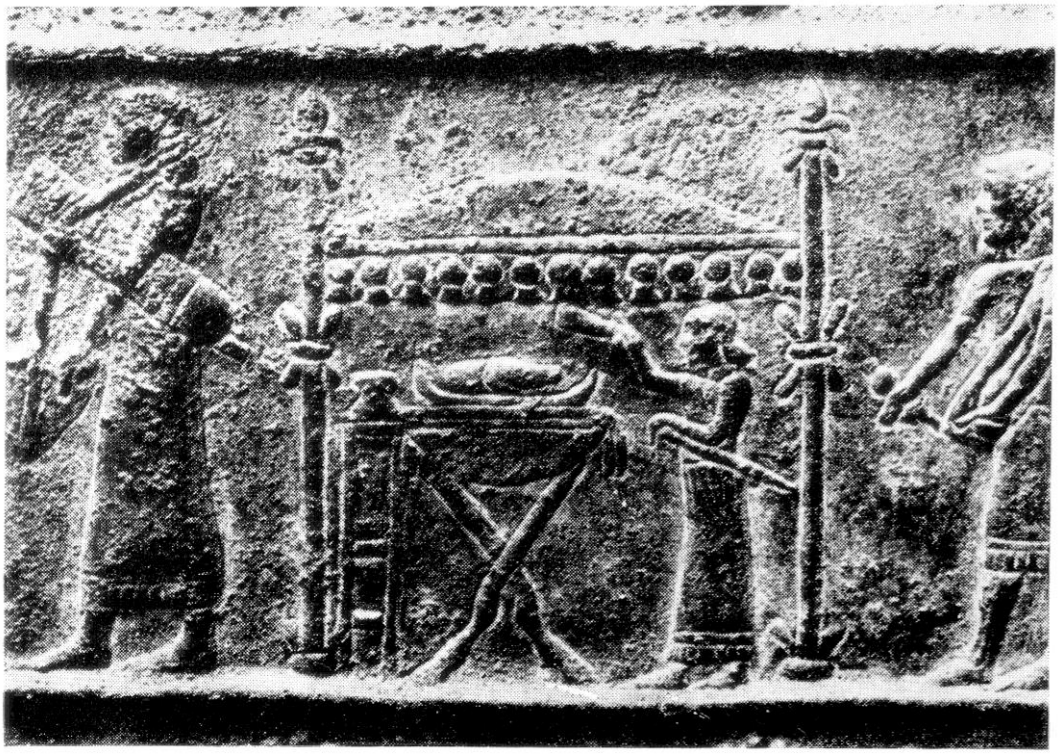


Fig. 6.1: Baldachin shown in relief at the gate of Balawat, 9th century BC.

Appendix I: Structural considerations

> **"**but it now lies on the ground, […] . In accordance with a certain oracle, the people did not raise it again. This, then, is the most excellent of the votive offerings."
>
> Strabo[1]

Any free-standing dedication required a fitting in order to remain structurally stable. This applies to wooden columns as well as to any other object erected by man. Especially when it comes to monumental objects, it is the structural effectiveness of the fitting that is crucial. This was evidently insufficient in the case of the Colossus of Rhodes, which was not set up again and remained on the ground - according to Strabo as given in the opening quotation. A firm fitting for a column with a wooden shaft can either be achieved by forcing the shaft firmly into the ground, or locking it in a deep socket on the upper surface of a base which keeps the shaft in position. In order to achieve the latter solution, a base made from a naturally heavy material such as stone is preferable to lighter materials. A base made of such material is also durable and has a chance to survive in spite of its age. Some bases potentially used for this purpose have already been mentioned in the preceding chapters (I, II and IV), and for two of these the height of the monument, including its wooden shaft, has been estimated.[2] According to the conditions of the base, it is also possible to calculate the structural viability of a lost free-standing monument made of timber. This cannot be done without several estimations, particularly considering that the only component existing is a block of stone at the bottom of the column. In order to narrow down the missing information, the stone block can be investigated. However, not every block with a socket at the upper surface was necessarily used as a base for a wooden shaft; for this purpose the socket has to be deep and the block of a significant weight.

---

[1] Strabo, *Geography* 14.2.5.

[2] The two estimated examples in chapter IV are the free-standing monument in the Heraion at Samos (page) and the free-standing column on top of the Mycenaean Bastion at Athens (page).

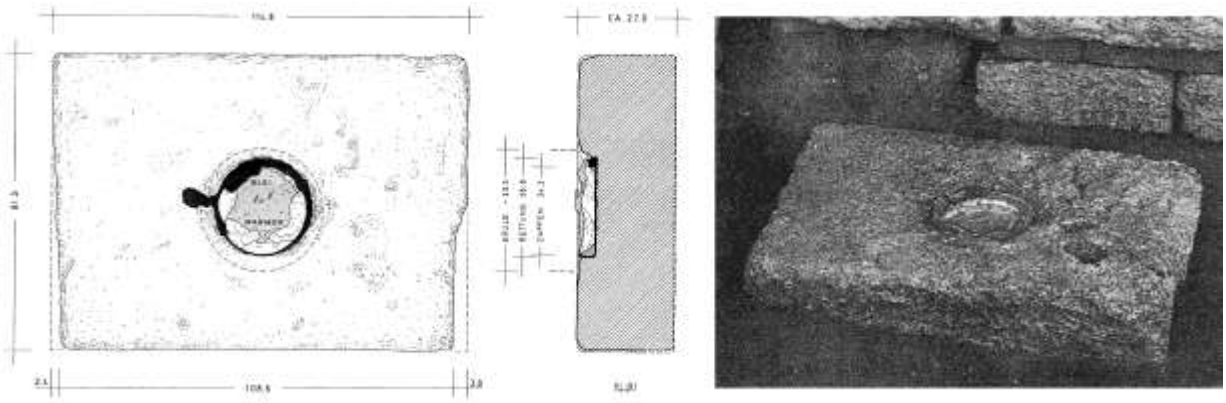


Fig. 6.2: Base for a free-standing column with a shaft made from stone. The gaps between the shaft and the base are filled by lead, Olympia.

The weight of the base is crucial as it acts as a counterweight to secure a firm stand. Due to the shaft being made from a naturally light material, a basic rule applying to this kind of monument can be obtained from the stone base: the heavier the base, the lower the center of the column's gravity. A low center of gravity results in an increase of resistance against toppling. As mentioned, the other characteristic required for a base in this context is a deep socket on the upper surface. A deep socket is the only possibility for a wooden shaft to be firmly fitted to the base in order to form a structural unity. This fitting can be enhanced by wedges (Fig. 6.1), or by filling the gaps with a material such as lead, a solution that survived at the bases of free-standing columns with shafts of stone (Fig. 6.2).[3] In order to be able to execute a calculation regarding the structural stability of a monument every missing characteristic, such as the height of the shaft, style of the capital (e.g. surface of the capital exposed to wind pressure), type of dedication and the accuracy level of the construction has to be estimated. This exercise is thus a theoretical one, which aims only to show whether the existence of free-standing columns made of wood is plausible. Reconstructing any ancient wooden structure is inherently hypothetical.

[3] The purpose of the drop-shape elements as shown in figure 6.1 is difficult. In fact, these may also refer to a kind of ornament (as visible at the Aeolic style) instead of a structural interpretation. For drop-shape elements at Aeolic capitals see: Betancourt, Philip (1977); for the remains of lead at columnar components see: Herrmann Klaus (1984): taf 21 – 4; Kissas, Konstantin (2000): 217, abb. 298.

Reconstructing the height of the shaft is crucial for an assessment of the structural viability of a columnar marker. This height can be estimated according to the shaft's lower diameter, which has to be taken from visible traces on the base. Considering that the actual proportions are unknown, the reconstruction of the height has to be guided by the proportions of the earliest existing free-standing columns made of stone. Despite the greater durability of this material, reconstructions of monumental stone columnar dedications of the early 6th century BC are not themselves absolutely certain. As Gottfried Gruben shows for the Sphinx column at Aegina, the scope of heights for this kind of dedication can vary extremly. In order to reconstruct its height, he uses two different values and both stand in relation to the shafts' lower diameter: a minimum of 8.20, and a maximum of 9.78 (table 6.1).[4]

Column:	**Lower column diameter**	**Column Height** min-max	**Capitals' surface facing the wind** Volute side of the capital	**Date**
Naxos, Sangri	approx. 25 cm	105 cm	1094 cm²	600+ BC
Cyrene, Sphinx column	est. to 67.5 cm	644 cm – 683 cm	7385 cm²	550 BC
Delphi, Sphinx column	95.5 cm	1022 cm	8724 cm²	570 BC
Aegina, Sphinx column	119 cm	1066 cm – 1255 cm	11675 cm²	580 BC

Table 6.1: The surface of Ionic columns exposed to the wind.

Considering that the shaft of these vertical markers is of timber, the calculation also presumes that their capitals are made of wood, unless there is evidence of a stone capital, which is very rare indeed.[5] Aside from the material, the style of the capital is also of significance. This has major implications on the

[4] The two values represent the possible variation the length of the monuments shaft. A lower shaft equals 8.20 times the lower columns diameter, a taller 9.78 times. To receive the total height of the monument, the height of the base and the height of a possible donation on its top have to be added, as these two elements are not considered otherwise. Gruben, G. (2007): 129.

[5] Such an example is the stone non-canonic volute capital from Delos, which has a torus decorated with fish scale (fig. 0.5).

surface exposed to the wind at the top of the column - large surfaces reduce the wind force required to overturn a column, hence endangering the column's stability. Of the possible styles to crown these dedicational posts, *striated toroi* and Doric capitals expose the smallest surface to the wind. The situation with Aeolic and Ionic capitals is different as these styles consist of a front face and a side; the two sides are only slightly wider than the curved surface of the shaft, while the surface of the front is significantly larger. Of the possible styles, the Ionic represents the worst case scenario because of its large surface area in relation to the height of the monument, and is therefore employed for calculation.[6] As shown in table 6.1, an increase in height is linked to an increase in the surface of the volutes of an Ionic capital. An exception to this proportional increase can be noted for small columns, as visible for the "oldest marble volute capital" from Sangri, Naxos (Fig. 5.3). This column measures little more than one metre tall but displays a lower column diameter of approximately 25 cm, and according to the proportions indicated by Gruben is significantly too short, indicating the need for greater tolerances in the free-standing context with respect to the hypothetical proportion range of built columns.[7]

As the base is the only remaining element of a free-standing column with a wooden shaft, the details of this component have to be evaluated carefully. As given in chapter IV, bases for free-standing columns do not necessarily display a socket of circular shape as used for the shaft. In fact, such a socket could also be rectangular. Based on this presumption, the shaft could be of a rectangular shape as well. In this case, the height of the shaft can hardly be based on the proportions of later circular shafts for monuments of stone. Considering that there is no available information available about a canon of the proportions for dedicational marker with a rectangular shaft, this possibility can only be suggested.

[6] The use of the Ionic style for the columns is entirely hypothetical and not proposed for reconstruction. Since this design represents the worst possible condition for the monuments, the bases investigated are equipped with this style solely for the purpose of the calculation.

[7] According to the diameter at the bottom of the shaft this little column made from marble should reach at least twice its height. As a stone column, the small monument is relatively heavy and has therefore to be considered structurally stable.

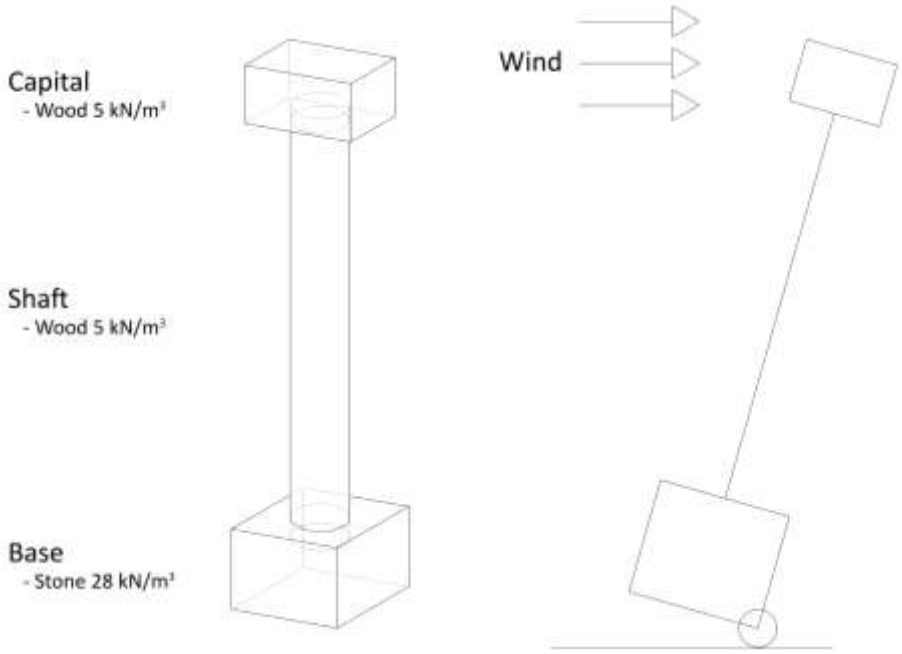


Fig. 6.3: Structural concept of a free-standing column with a base.

Equipped with a shaft and a capital of timber, a monument's structural capability can be tested. Assuming that the elements of the column are firmly connected and the monument is placed on horizontal ground, a wind force can be applied (Fig. 6.3). Under normal conditions, modern constructions are calculated to resist wind pressure of 1 kN/m^2, this value is used as guidance for monuments of antiquity even though modern construction requirements cannot be granted for monuments of antiquity. An assumption that leads to a value below 1 kN/m^2 has to be considered as critical, a value of more than 1.25 kN/m^2 has to be considered as 'well fitted'; any exceeding value leads to an even more stable condition. Even if a calculation turns out to be below 1 kN/m^2, this does not necessarily indicate that the base could not have been equipped with a wooden shaft. It has to be assumed that either the column was equipped with a capital of a lesser surface than assumed (i.e. not with an Ionic capital of that extent) or that the column was not structurally stable for the proposed conditions. The erection of such a monument inside the shelter of a building remains a possibility.

Smyrna, a small column base:

A small stone, found at Smyrna – Turkey, is ideal for this purpose of receiving a free-standing column. This block is documented by J.M. Cook and R. V. Nicholls in the excavation report as a "curious socketed stone base" which was found in the Weapon Deposit. According to its environment, the block is dated to the period of about 630-610 BC and interpreted as a column base. Nicholls writes that the block served as a base for the "inner wooden columns of the *South-East Stoa* or the *South Stoa*". In respect to its deep socket an interpretation of this base as being part of a building is unlikely, the association with a votive column seems more plausible. This socket has a 14 cm depth with a diameter of 24 cm additionally; the upper rim is cased in a ring of iron of which some traces remain (Fig. 6.4).

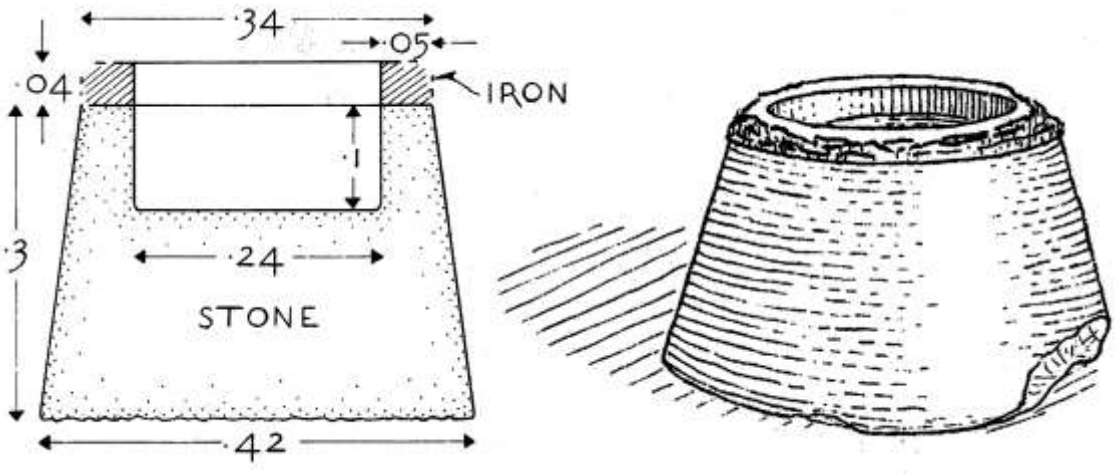


Fig. 6.4: "column base (?) with iron ring" of a free-standing column from Smyrna.

Weight of Base	**Lower column width**	**Estimated height** min - max in cm	**Estimated max. surface area of the capital**	**Resistance to Wind pressure**	**Proposed Styl of the capital**
0.9 kN	24 cm	230 - **269**	2500 cm²	0.77 kN/m^2	Ionic
			1350 cm²	1.1 kN/m^2	Aeolic

Table 6.2: Characteristics of the potential free-standing column from Smyrna.

With a weight of 92 kg, the base is quite light, while the lower diameter of the column is small. According to the proportions known from stone monuments (as

suggested by Gruben), the length of the shaft can be estimated between 2.0 m and 2.35 m. Given the small size of the column it is questionable whether normal proportions apply, as indicated by the small marble column from Naxos, Sangri. The calculation has to consider a surface for the capital of about 10 cm^2 per cm height of the column (as can be obtained from table 6.1), resulting in a capital area of about 2.500 cm^2. As the calculation shows, such a column, if exposed to the wind force, starts to topple at a wind pressure of 0.77 kN/m^2, which is considered to be unstable, according to modern standards. As the calculation indicates, the base is not heavy enough to support a column with an Ionic capital of this size. However considering that the location is at Smyrna suggests the use of an Aeolic capital. Given the shortage of information about early Aeolic capitals one can only guess at this stage, but it would be sure to present a smaller surface area than an Ionic capital fitting a similar shaft width. Reconstructing the column with a volute capital of a smaller surface, about 1350 cm^2 (as can be assumed for the Aeolic style), results in a pressure of 1.1 kN/m^2, a value that is structurally viable (table 6.2). The range of likely proportions of the entire column, equipped with a shaft and a capital made of wood, is expected to reach a maximum height of 2.67 m (Fig. 6.5), of course it could have been not so tall, especially bearing in mind the modest height of the column from Sangri. With a height as small as this, the column does not present a challenge to a temple and is also too small to elevate a dedication of significant size. Nevertheless, its use as counterweight for a wooden free-standing column is perfectly plausible.

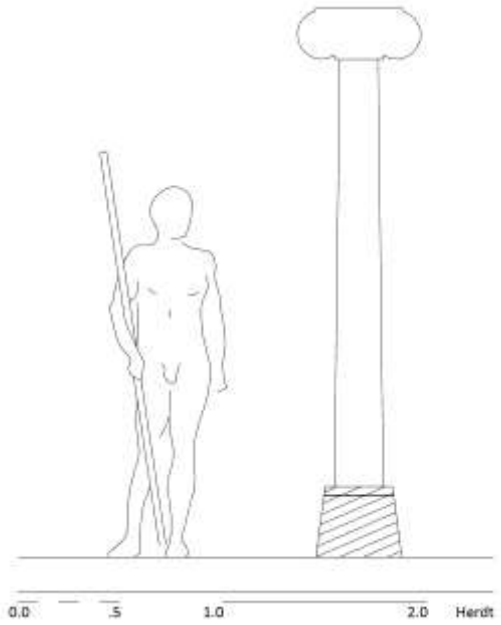


Fig. 6.5: Reconstruction of the wooden column at Smyrna with an Aeolic capital.

Source: Cook J. M. and Nicholls R.V. (1998): 100-101.

Appendix I

Samos, a monumental wooden column:

One of the largest blocks that can be assigned to a free-standing wooden column has been discovered at Samos. This block, as already mentioned in chapter IV, is of significant weight and age as it was found in the context of the early phases of the sanctuary of Hera. It has been interpreted as forming the support for the first sanctuary's icon - according to Ernst Buschor and Hans Schleif. Though much damaged and in pieces, most of this block survives, only a single piece of the bottom seems to be lost (fig. 4.12). As reconstructed, this cylindrical block is large, its diameter measures 0.96 cm, its total weight would have been up to 990 kg (Fig. 6.6). With such a mass, this block is suited to receive a wooden shaft of monumental extent.

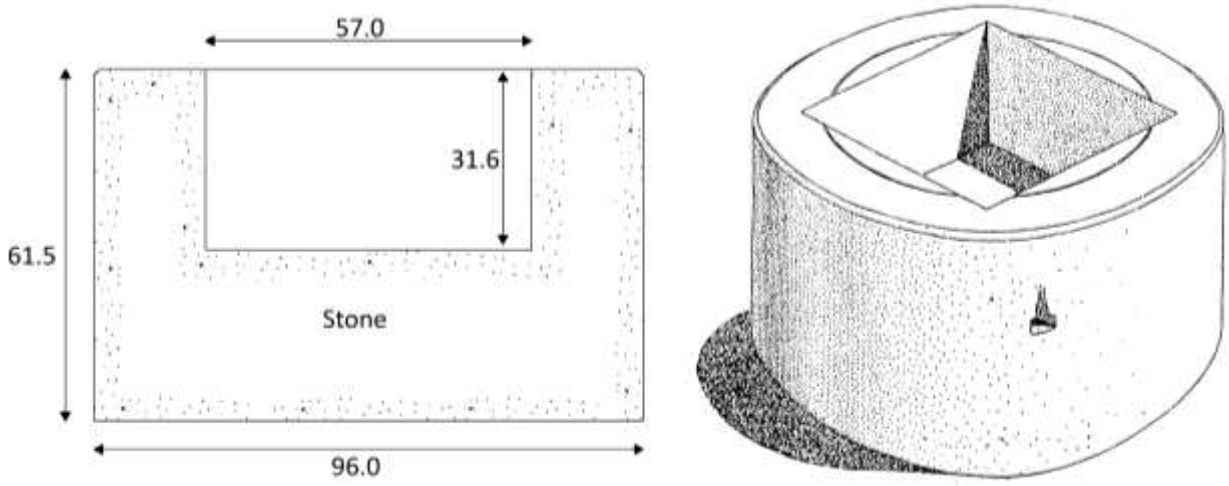


Fig. 6.6: Base for a monumental free-standing column from Samos.

Weight of Base	**Lower column width**	**Estimated height** min - max in cm	**Estimated max. surface area of the capital**	**Resistance to Wind pressure**	**Proposed Style of the capital**
9.67 kN	64 cm circular	626.3 – **707.5**	1350 cm²	10.59 kN/m^2	Striated torus
	57 cm square	569 – **639**		11.12 kN/m^2	
	64 cm circular	626.3 – **707.5**	7000 cm²	2.25 kN/m^2	Ionic
	57 cm square	569 – **639**		2.37 kN/m^2	

Table 6.3: Characteristics of the free-standing column from Samos.

Reconstructing the height of this monument has to take into account that the socket visible at the surface of the block is square – so a square shaft represents a

valid alternative to the usual circular form. The mortise of the shaft measures 57 cm by 57 cm, the score line measures approx. 64 cm in diameter. A second concern is the style of its capital. A local design from Samos is the so-called *striated torus*. This design is popular and archaeologically confirmed for both contexts investigated. Even though the *striated torus* exposes a significantly smaller surface to the wind, both alternatives are considered (table 6.3). As the calculation shows, the weight of the base allows the support the large Ionic capital with a surface of approx. 7000 cm². In fact, the weight of the base is more than sufficient to ensure a secure fitting; the value for the wind pressure is about twice as the required value that is considered to be stable. According to the calculation, the assumed maximal height of about 7 m for the entire column is not endangered by wind pressure. The alternative termination for the columnar marker (e.g. the *striated torus* with an area of about 1350 cm²) increases the post's stability up to ten times its required resistance. The calculation indicates that this stone block is suited to receive a large wooden shaft and keep it securely fitted; a shaft of an extent which has to be addressed monumental for its period of construction.

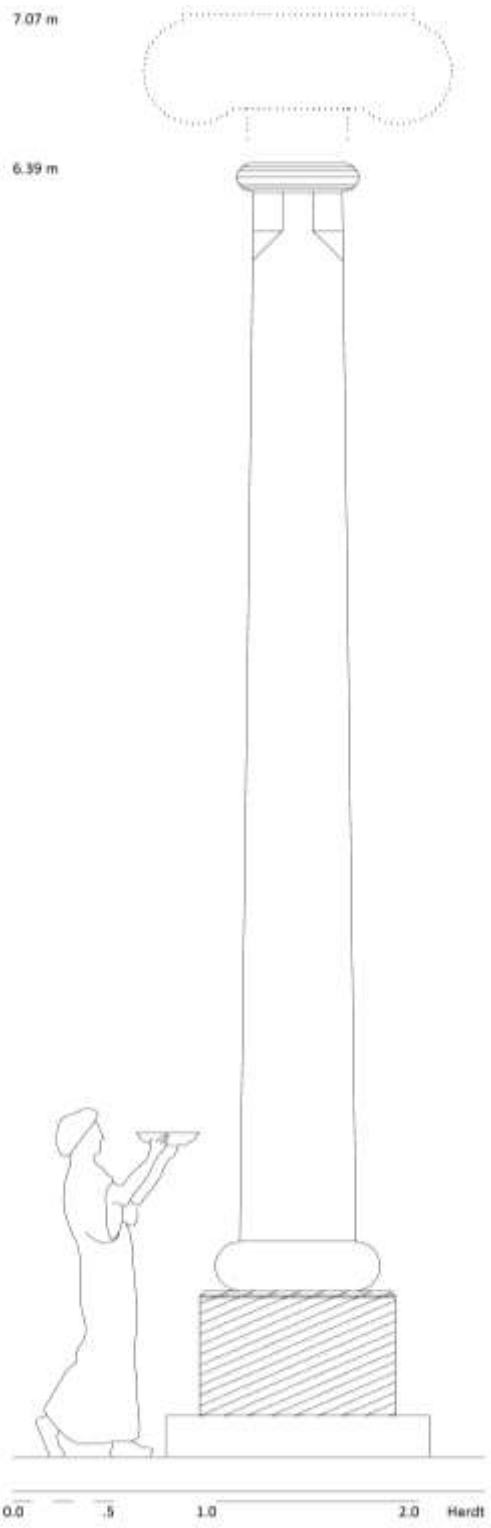


Fig. 6.7: Two alternative reconstructions for the height of the timber shaft, Samos.

Source: Buschor, Ernst and Schleif, Hans (1933): 158 -161.

Appendix II: Catalogue of remains attributed to votive columns

"Be slow to set about an enterprise, but persevere in it steadfastly when once it is undertaken."

Bias of Priene[1]

Several sites exist which contain free-standing columns in addition to the Archaic sanctuaries investigated in chapter IV. These sites were not part of the investigation due to the columns not being of monumental size, or due to the lack of the information necessary in order to restore a spatial model including a roughly coeval temple (if such a construction actually existed). Vestiges of selected such columns are catalogued in this section. However, the selection offered in the catalogue has to be kept brief. With fragmented columns comes the difficulty of defining their location within a sanctuary - a task which is impossible unless the object is of monumental size and a solid foundation which still remains *in situ* can be found. Due to the fragmented status of preservation, some columnar fragments listed are not interpreted as free-standing but this structural context has to be seen as an alternative. In fact, the original context of several components is not certain and some fragments are not necessarily part of a free-standing dedication, or part of a column but part of an altar, pedestal etc. instead.

There are a phenomenal amount of fragments associated with free-standing donations that can be traced to the Archaic period. However, it is not the aim of this dissertation to collect all of these; such study has already been undertaken by Dimosthenis Donos: *Studien zu Säulen- und Pfeilermonumenten der archaischen Zeit*.[2] Indeed, the catalogue offered by Donos contains almost every fragment of free-standing columns of the Archaic period. This is characterized by written descriptions and evaluations that are often based on publications and they do not always reflect personal observation *in situ*. Virtually

[1] Diogenes Laertius, *Lives of Eminent Philosophers*: 1.87; Perseus online catalogue, English by R.D. Hicks, 1972.

[2] Dimosthenis, D. (2008).

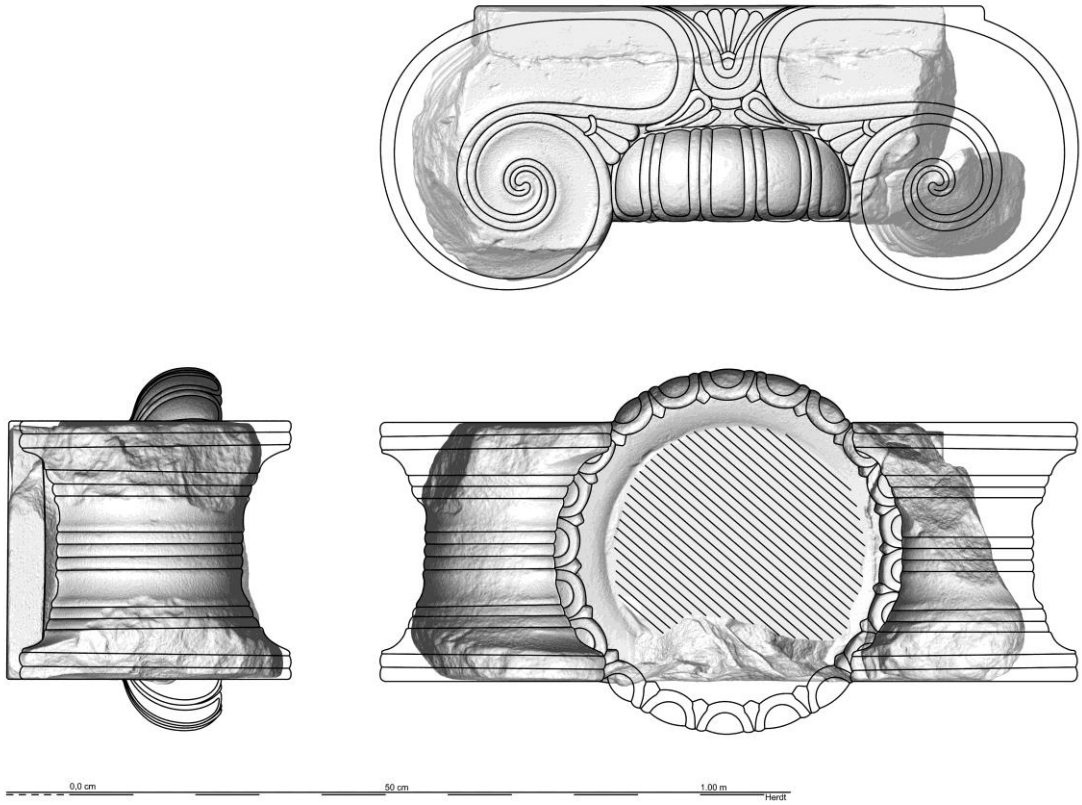
all the illustrations provided are reproduced ones that already exist. The limitations of an evaluation based on previous publications becomes apparent in a few interpolation that are not always correct. An example for the difficulty of putting a complex object as the Ionic capital in few words can be seen in Donos' descriptions of the capitals from Delos, Paros, Oropos and the Sphinx monument(s) from Aegina.[3]

Therefore the catalogue presented here has 2 parts: Part a) comprises volute capitals belonging to votive capitals as surveyed using laser scanning and CAD for documentation and reconstruction by the author. Part b) is a supplement which includes examples known from previous publications which are selected because of their relevance to substantive issues discussed in this dissertation. The ideal would be to bring all these examples, in addition to others up to the standard of appendix IIa. Such an enterprise would have to progress slowly over time, as suggested in the statement by Bias of Priene – one of the wise men of antiquity.

***

[3] K10 on page 465 (Mus. Inv. A 583); K46 on page 481 (Mus. Inv. 775); K199 on page 569 (Inv. Nr. 4797); K200 on page 570. Despite this criticism, the completeness of his catalogue is impressive and very useful for further investigations on the topic.

Delos



2nd quarter 6th century BC

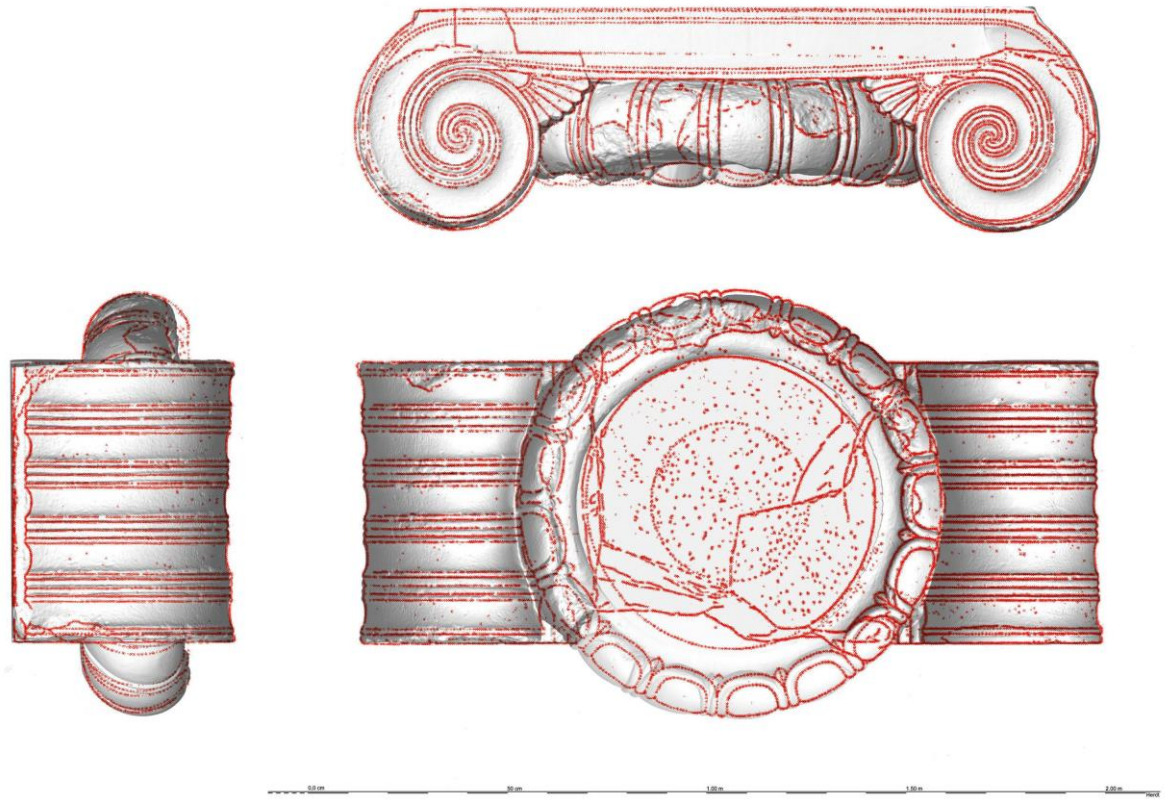
Mus. Inv.: A 583

The capital shows a socket at the top and bottom surface which could not been recorded by the survey in 2006.

Amandry, P (1953): 19, n. 1, pls. 15.3, 16.4; Vallois, R. (1966): 170-175; Martin, R. (1955-1956): 126, pl. 27.3 Martin, R. (1973): 387-389, fig. 14-17; Kontoleon, N. M. (1968): 178-181; Felsch (1969): 112-113; Pedley (1976): 25-28, pls. 3a-c; Kokkorou-Aleura (1974): 81; Kirchhoff, Werner (1988): 27; McGowan (1993): 166-173, no. 2, pl. 3; Bakker Karel (1999): Ion-18; Donos, Dimosthenis (2008): 465-466; Segal, Phoebe (2010): 159.

Appendix IIa

Delphi

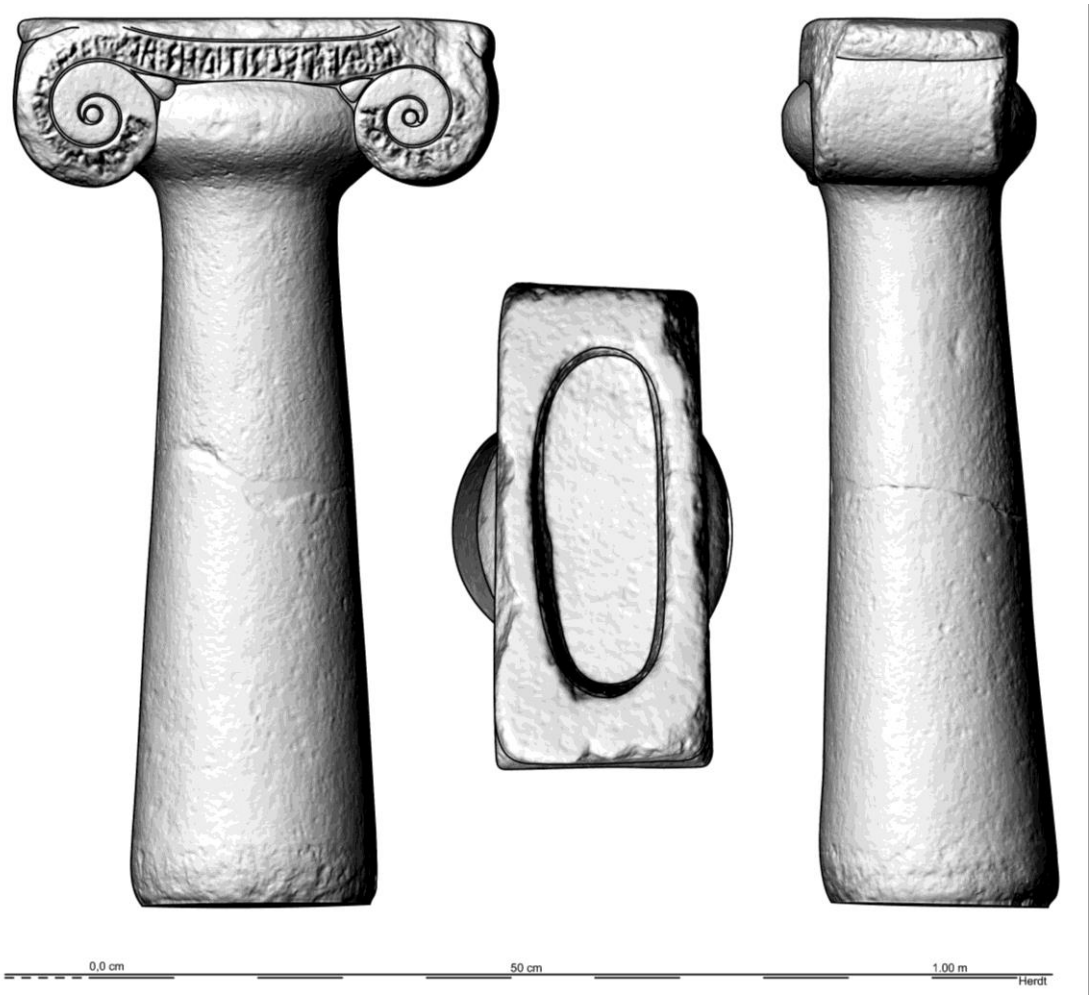


1st quarter 6th century BC

Delphi Museum Inv. No. 365 (380 / 1050 / 7192)

Amandry, Pierre (1953): pls. 1-17; Homolle, Th. (1909): pls. 5-6a; Poulsen, F. (1920); Kokkorou-Aleura (1974): no. 105; Pedley, J. G. (1976): 26; Jacob- Felsch, M. (1969): 109; Floren, J. (1987): 138; McGowan, E. (1993); Bakker Karel E. (1999): Ion-6; Barletta, B. (2001): 98-105; Donos, Dimosthenis (2008): 504-506; Segal, P. (2010): 157.

Naxos



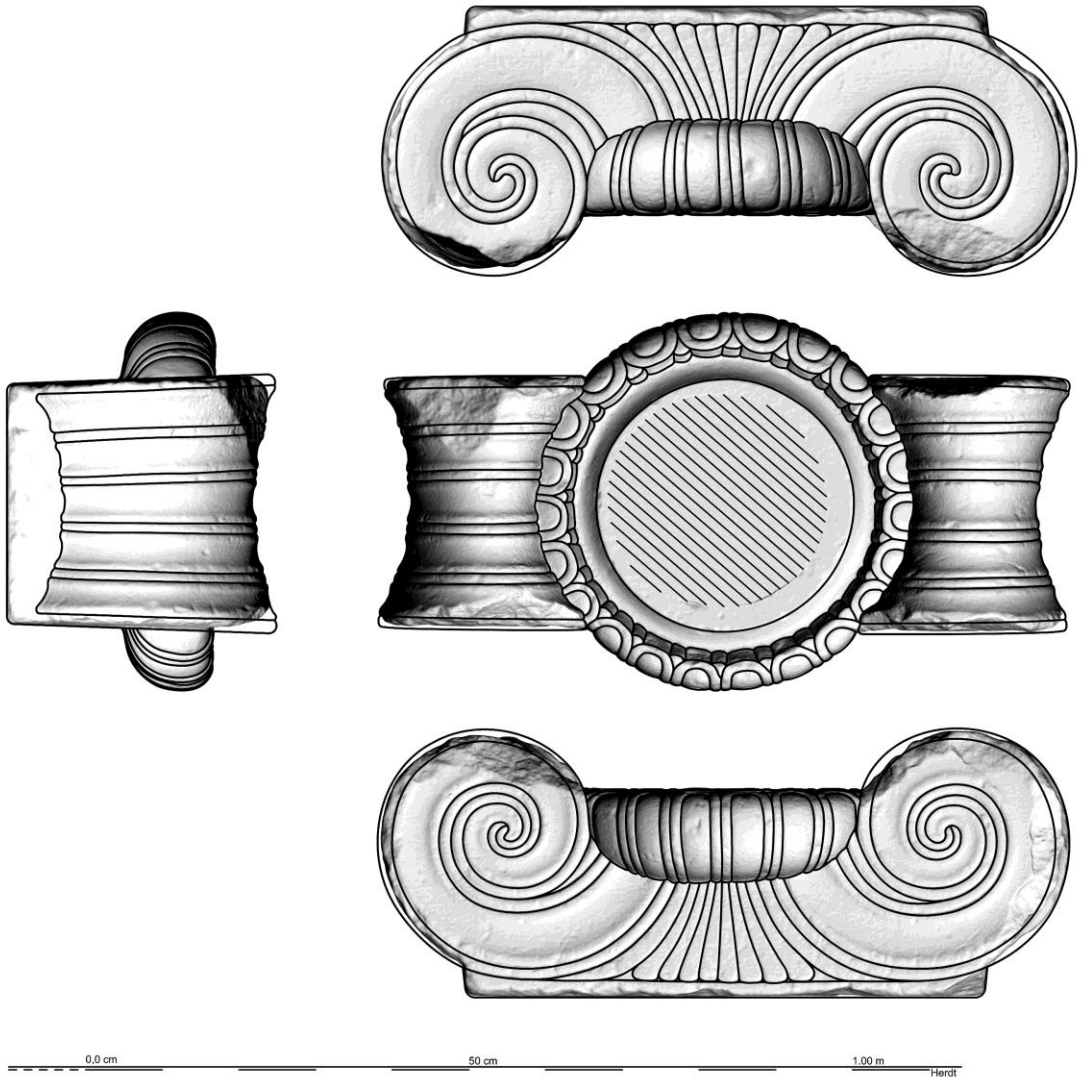
End 7th century BC

Naxos Museum Inv. No. 8

McGowan (1993): 207-209, no. 9; Kirchhoff, Werner (1988): 19, no. 7; Kontoleon, N. M. (1954): 338 Abb. 1; Lambrinoudakis V. and Gruben, G. (1987): 606, fig. 45; Lazzarini, M. L. (1976): no. 158; Barletta, B. (2001): 98-106; Gruben, G. (1989): 161-172; Martin, R. (1955-1956): 119-132; Ohnesorg, Aenne (1996): 39-47; Hellmann, M.-C. (2002): 146, Abb. 191. 225; Wilson Jones, M. Herdt, G. (2008): 246-249; Segal P. (2010): 157.

Appendix IIa

Oropos

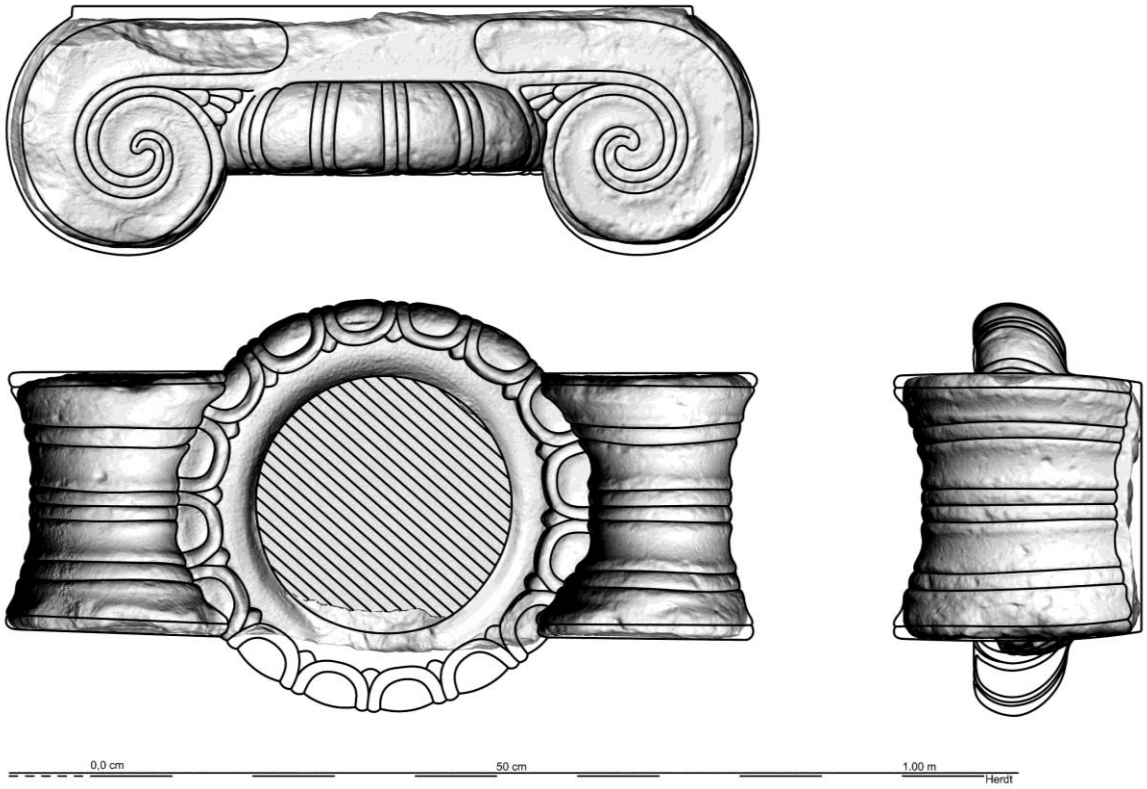


3rd quarter 6th century BC

Athens Mus. Inv. 4797

McGowan, E. (1993): pl. 7; Kaltsas, N. (2002); Betancourt, P. (1977): pl. 67; Kirchhoff, Werner (1988): 216; Bakker, Karel E. (1999); Iver-11; Shoe Merit, Lucy (1996): plate 34, 35; Donos, Dimosthenes (2008): 569; Segal, P. (2010): 183.

Paros



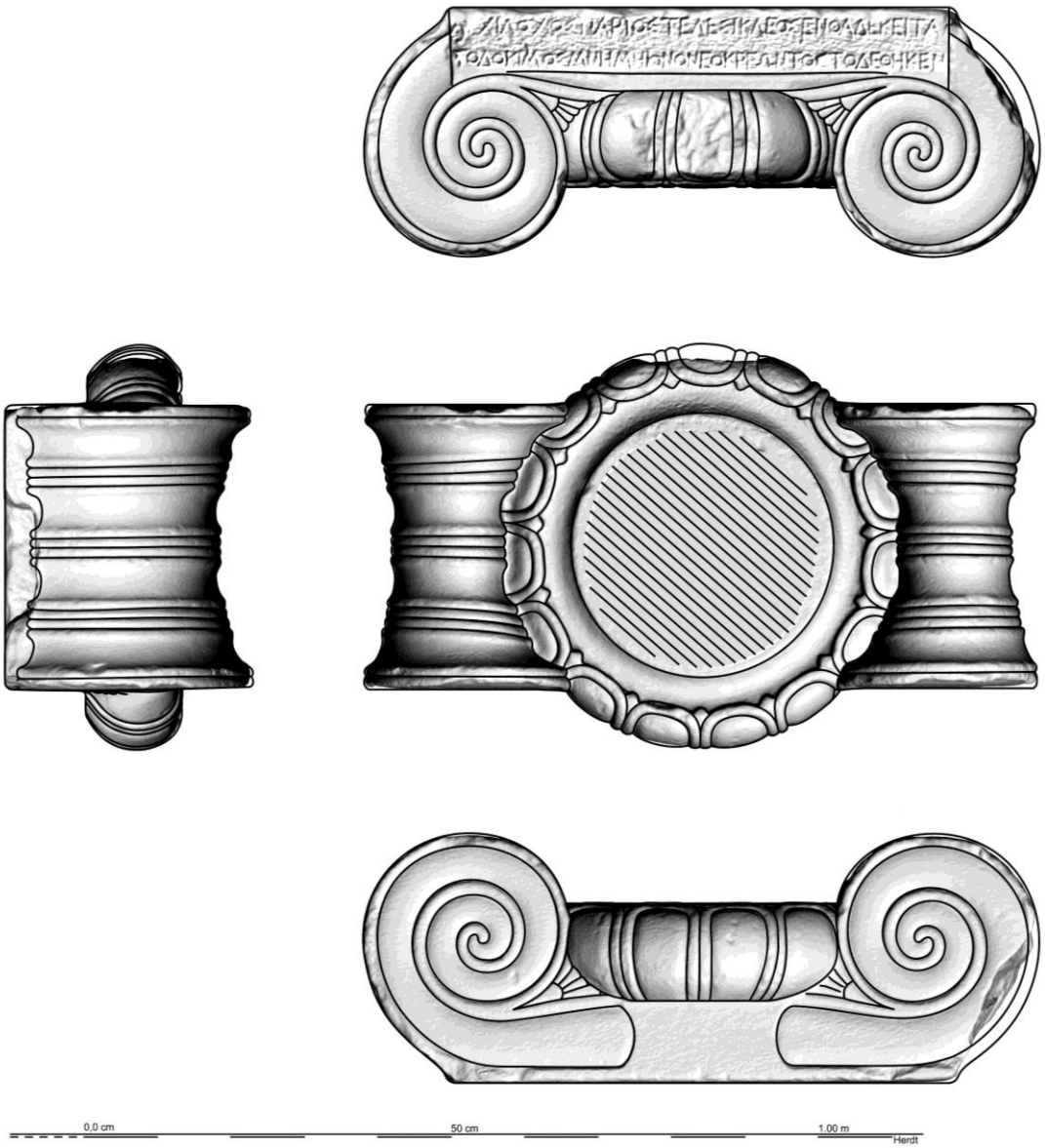
2nd quarter 6th century BC

Paros Museum 775

McGowan, E. (1993): pl. 5; Orlandos, A.N. (1962): figs. 225-226; Daux, G. (1963): figs. 18-19; Kontoleon, N. M. (1968); Gruben, G. (1972): figs. 36 a-b; Kirchhoff, Werner (1988): 23; Ohnesorg, Aenne (1993): 113; Bakker, K. E. (1999): Ion-10; Donos, Dimosthenis (2008): 481; Segal, P. (2010): 164.

Appendix IIa

Paros

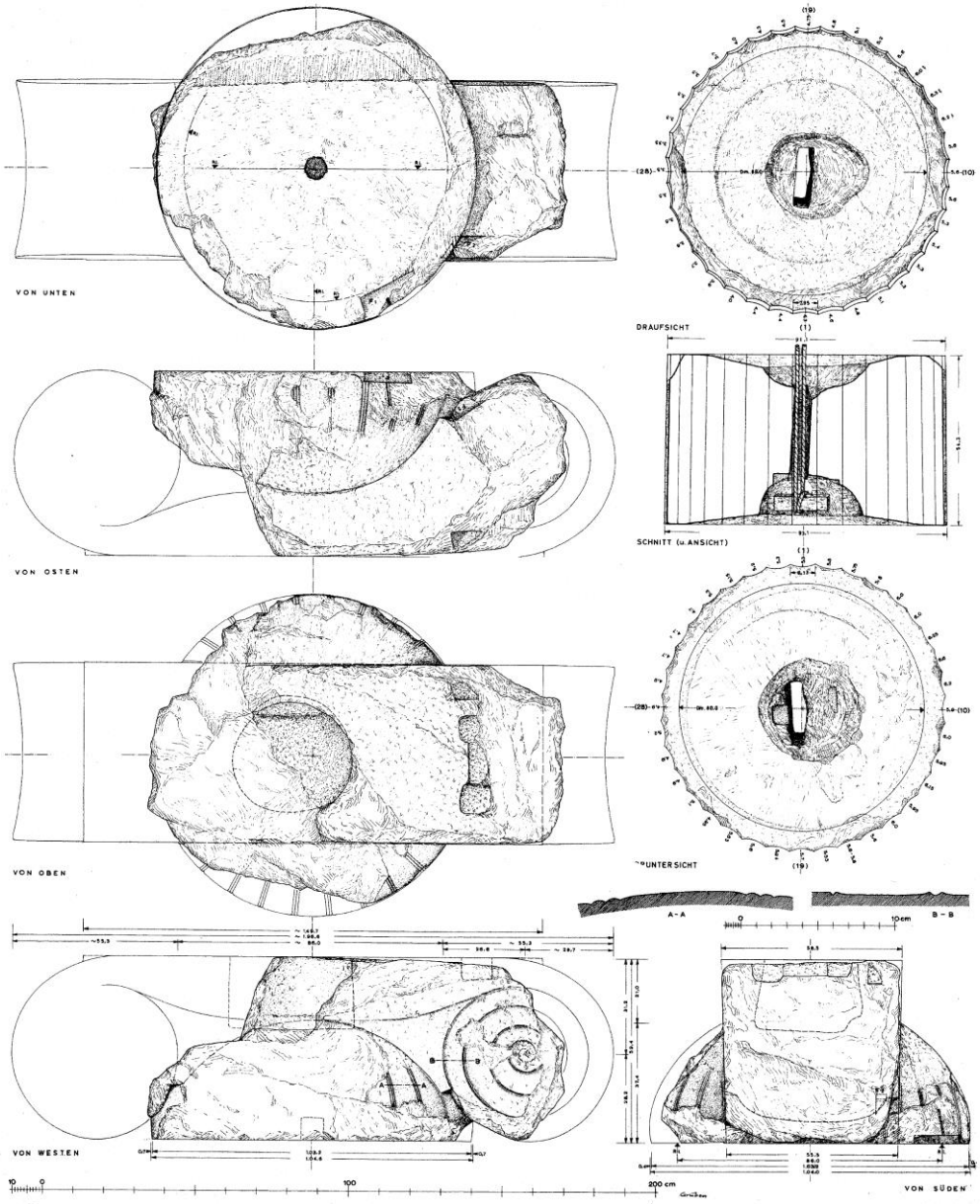


3rd quarter 6th century BC

Paros Museum Inv. No. 733

McGowan, E. (1993): pl. 6; Pedley, J. G. (1976): 27; Orlandos, A.N. (1960): 184-185, figs. 206-207; Orlandos, A.N. (1961): 195-196, figs. 202-203; Daux, G. (1961): 846, figs. 24-25; Kontoleon, N. M. (1964): 41-44; Kontoleon, N. M. (1968): 178-181; Kontoleon, N. M. (1970): 48; Ohnesorg A. (1982): 271-290, fig. 1; Bakker, K. E. (1999): Ion-17; Donos, Dimosthenis (2008): 481-482; Segal, P. (2010): 165.

Aegina, Aphaia

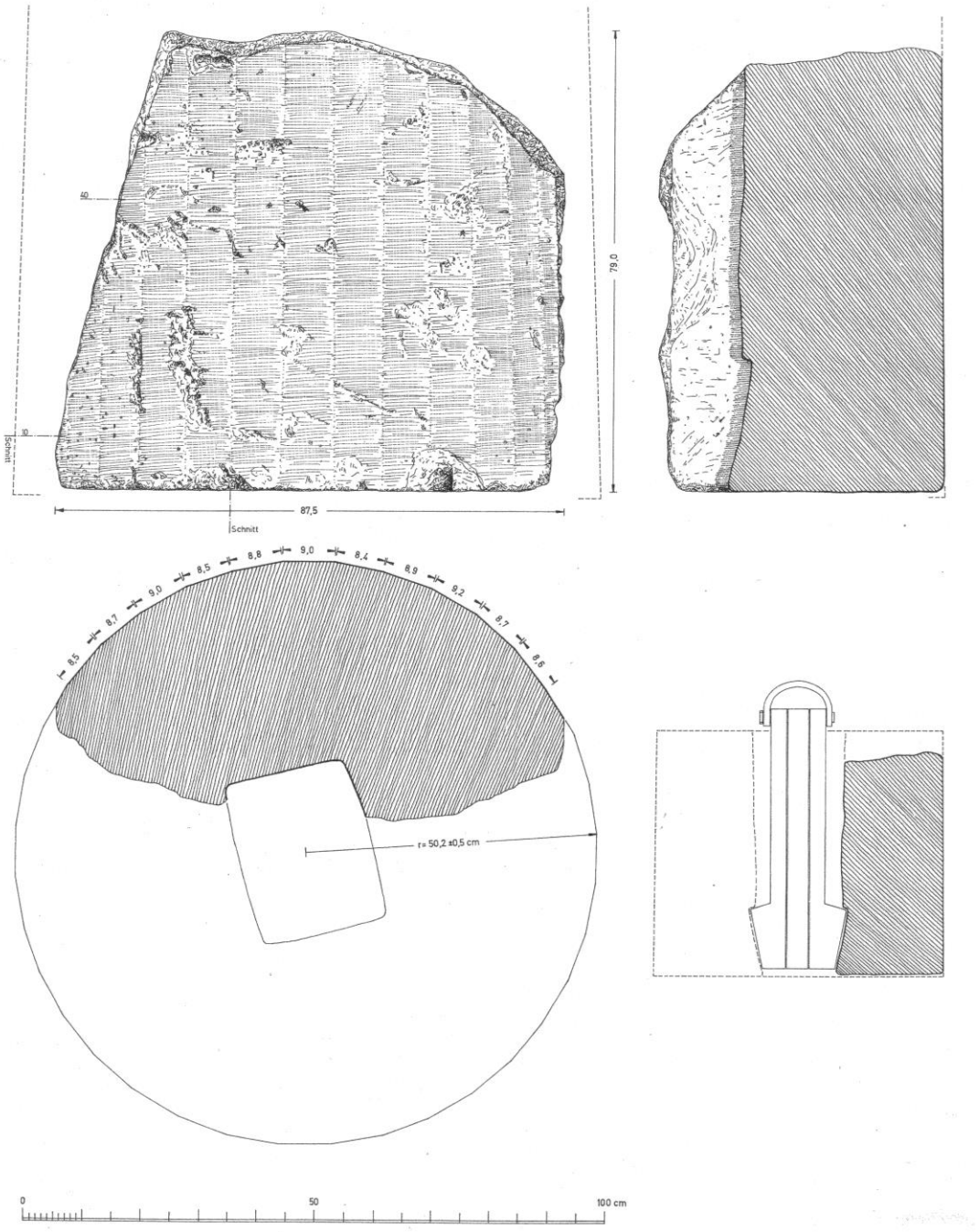


1st quarter 6th century BC

McGowan, E. (1993): 201-206; Fiechter, E. in Furwängler A. (1906): 12, 13, 156-158, 486-487; Alzinger (1972): 199, fig. 31; Williams, D. (1982): 55-68; Gruben, G. (1965): 170-208, pl. 2; Bakker, K. E. (1999): Ion-22; Kirchhoff, Werner (1988): 19; Dimosthenis, Donos (2008): 570; Segal, P. (2010): 170.

Appendix IIb

Aegina, sanctuary of Apollo

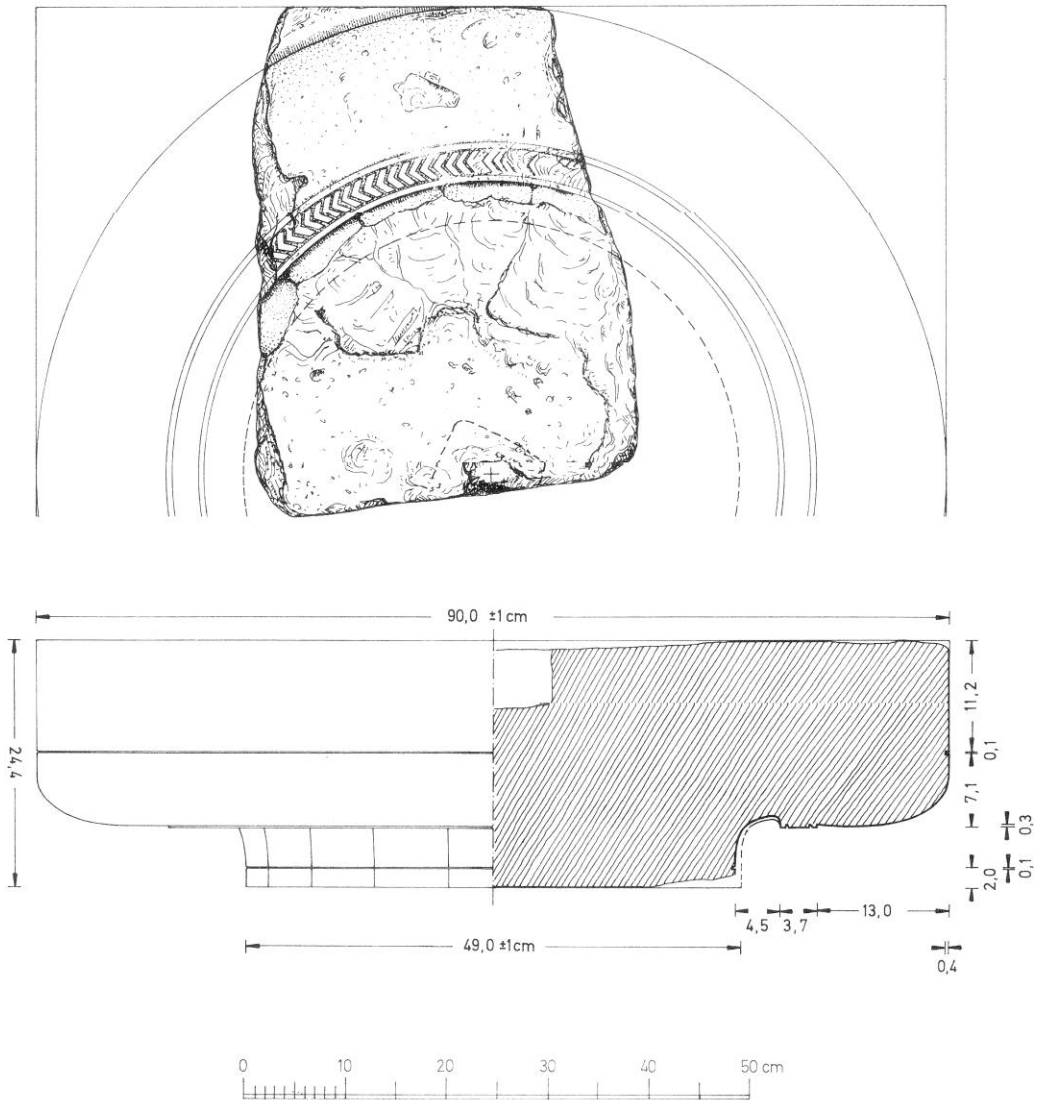


Late seventh century BC

Inv. Nr. A919

Hoffelner, K. (1996): abb. 1; Segal, P. (2010): 170.

Aegina, Apollo



1st quarter 6th century BC

Mus. Inv. 2375

Barletta (2001): 83; Hoffelner (1996): 16 - 18, taf. 2d, e; Donos, Dimosthenis (2008): 572; Segal, P. (2010): 171.

Appendix IIb

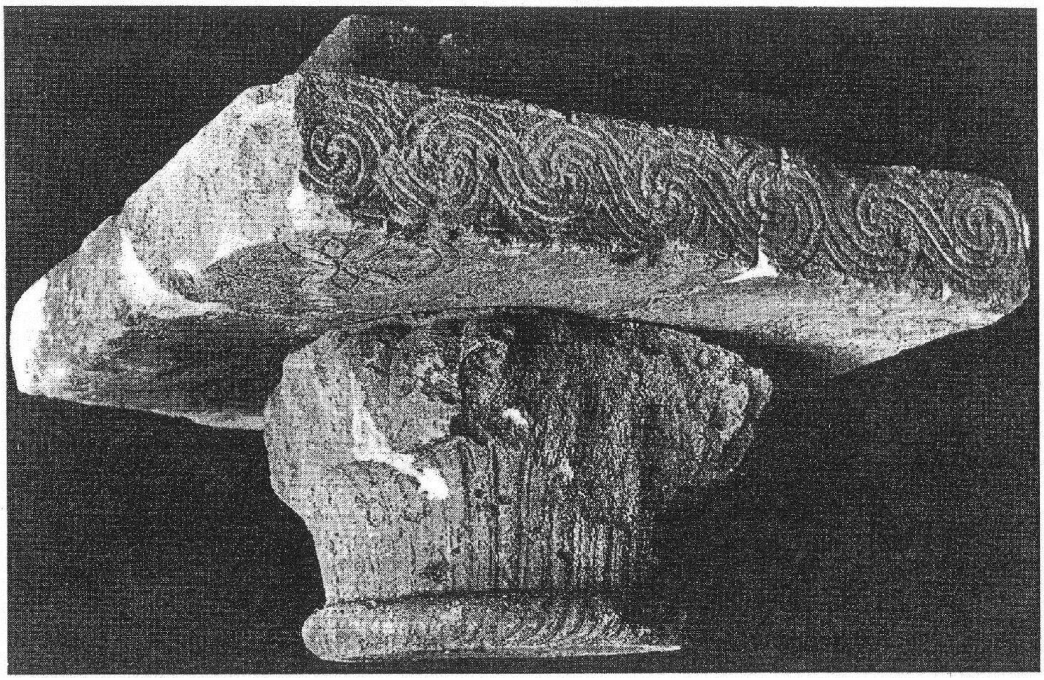
Argos, sanctuary of Hera

7th century BC

3 similar drums (?) exist which are commonly associated as plinth for wooden columns of the building (Hellner 2004, 74). However, only one block matches the dimensions of the cavities on the *stylobate*, the other two are significantly too large (largest approx. 90 cm).

Amandry, P. (1952): 222-274; Ingrid Strom (1988): 180; Hellner Nils (2004): 72-73.

Arkades

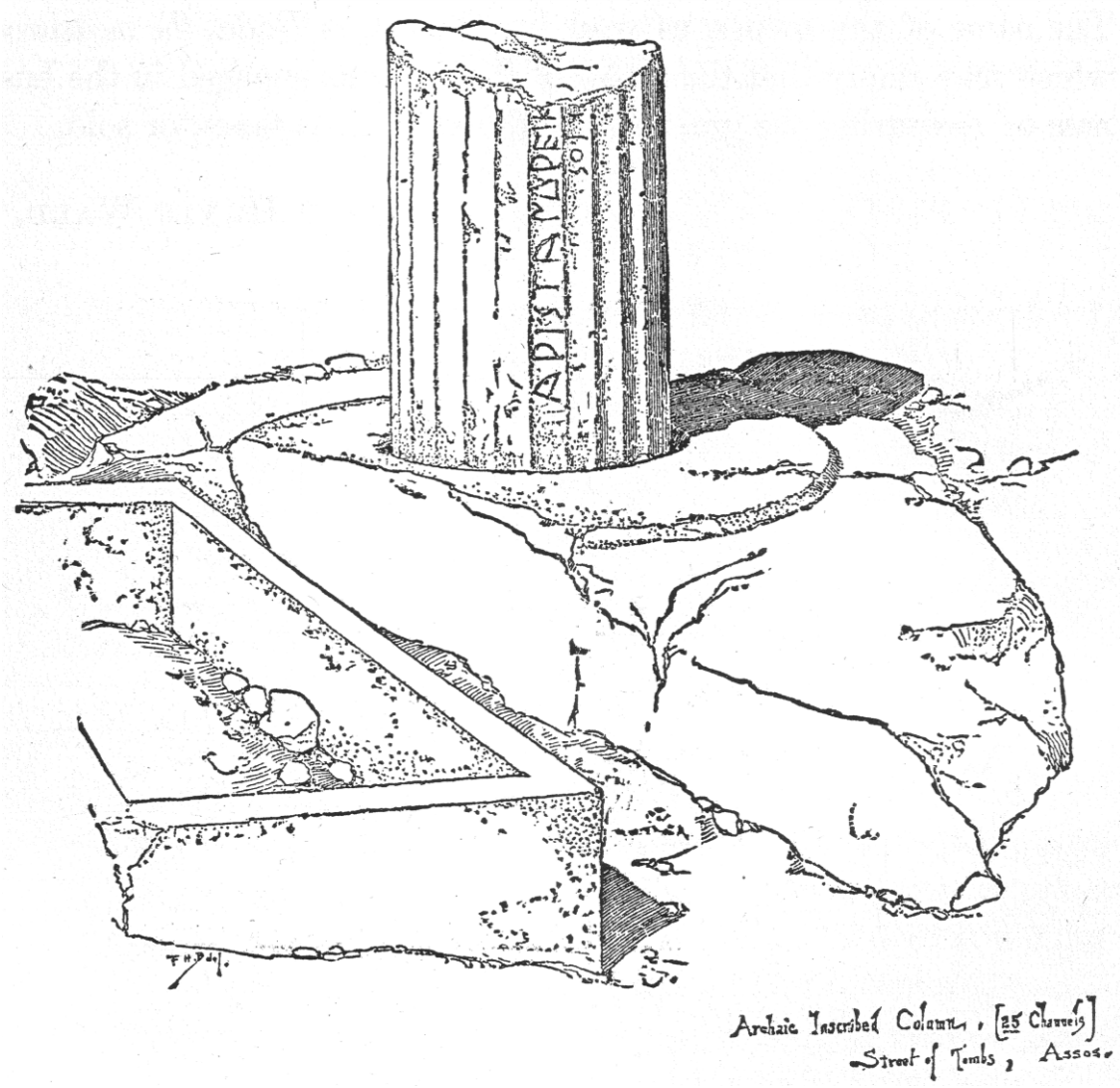


8th -7th century BC
Museum Heraklion

Levi, D. (1927-1929): 178-187; Dinsmoor, W. B. (1973): 59; Wesenberg, B. (1971): 44, abb. 87; Shaw J. W. (2001): taf. 15.

Appendix IIb

Assos, necropolis



“oldest of all monuments discovered in the Nekropolis”

Clarke, J. T. (1886): 267, fig. 33.

Athens, acropolis

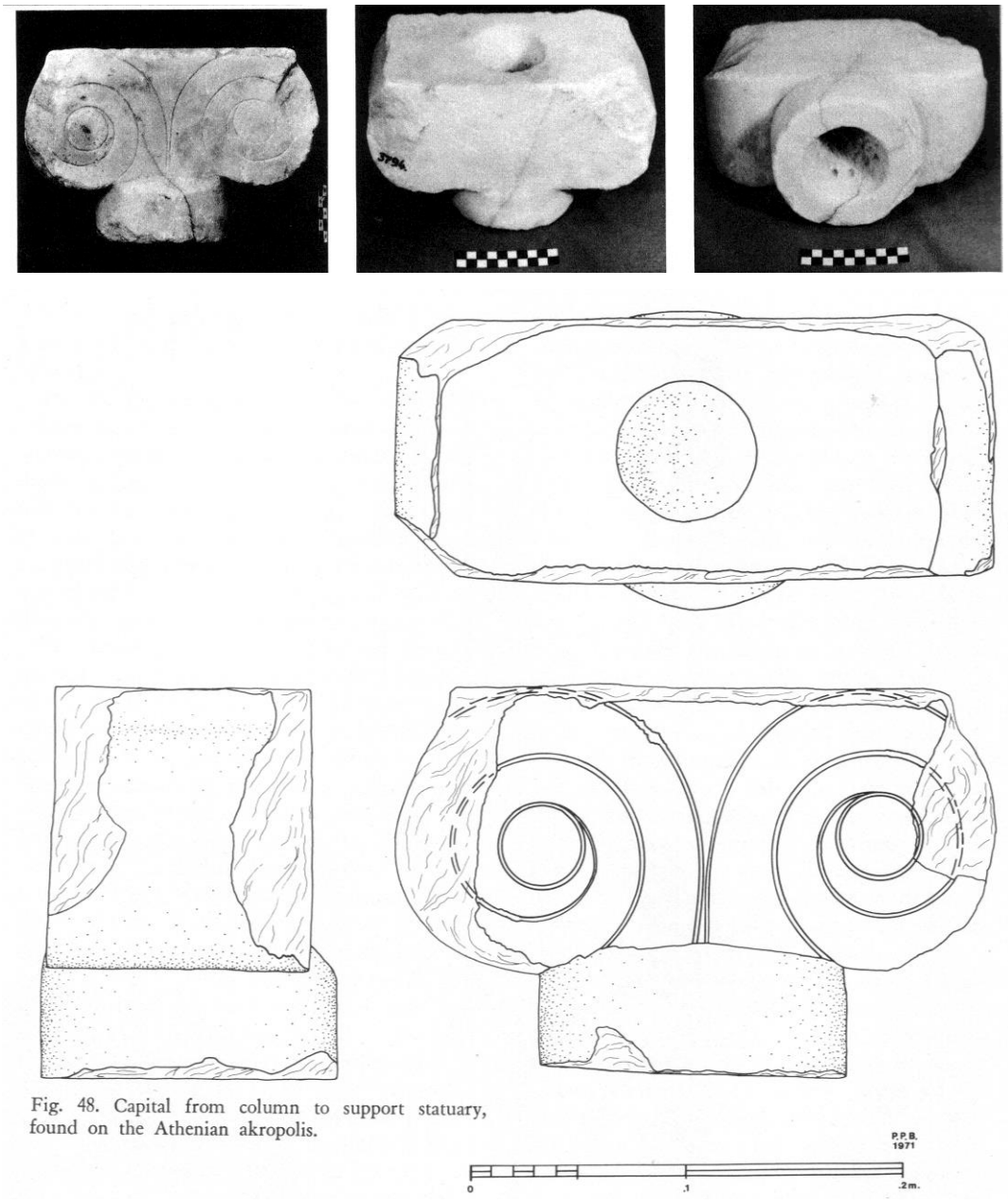


Fig. 48. Capital from column to support statuary, found on the Athenian akropolis.

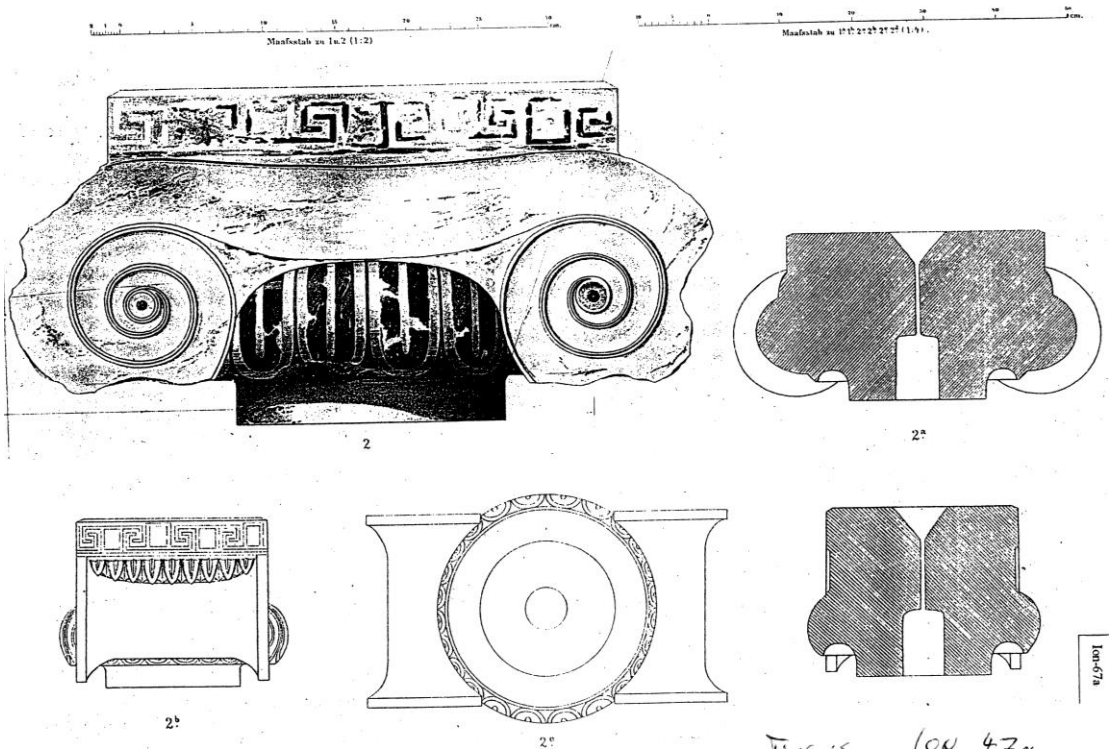
2nd half 6th century BC

Mus. No. 3794

Betancourt, P. (1977) 141, pls. 53-55 and fig. 48; Meurer, M. (1909); Durm, J. (1910): fig. 284; Raubitschek, A. (1938): fig. 23; Jacob-Felsch, M. (1969); Bakker, K. E. (1999): Iver-7.

Appendix IIb

Athens, acropolis

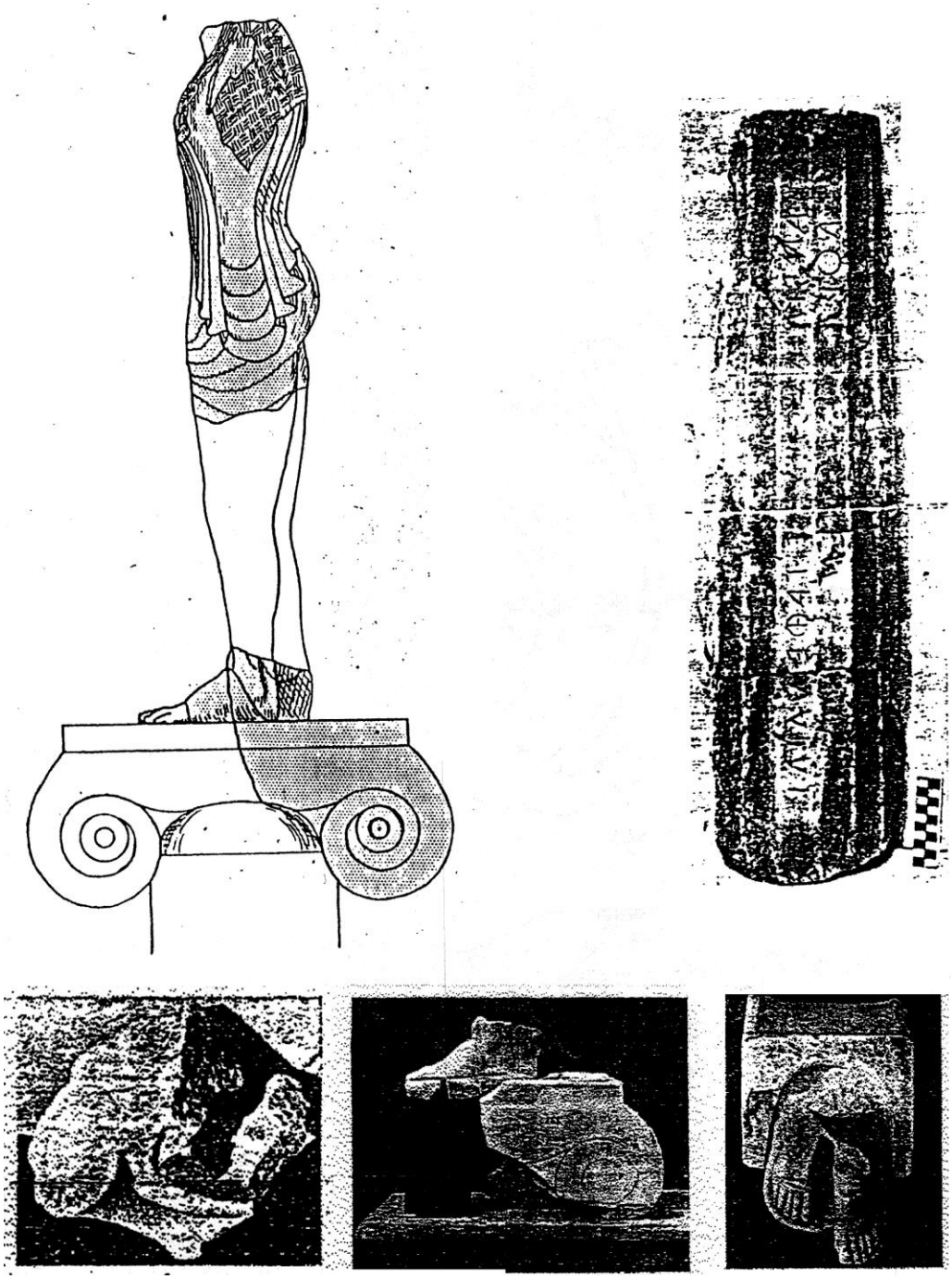


Last quarter 6th century BC

Acropolis Museum, Athens No. 135

Luschan, (1912): 8, fig. 3; Borrmann, R. (1888): Plate 2,; Raubitschek, A. (1938): 167; Jacob-Felsch, M. (1969): 34; Alzinger, W. (1972/73): 196; Theodorescu (1980): 163, plate 2; Bakker K. E. (1999): Ion-67(a?); Kissas, K. (2000): 192.

Athens, acropolis



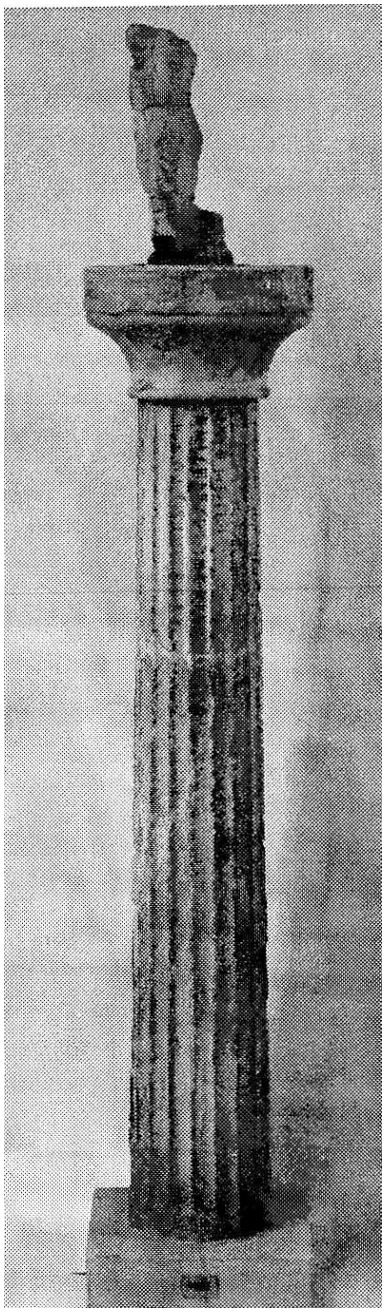
3rd quarter 6th century BC

Inv.3850-475

Raubitschek, A. (1938): 143, 163, 166, 171; Bakker, K. E. (1999): ion 76; Donos, Dimosthenis (2008): 517; Kissas K. (2000): 186;

Appendix IIb

Athens, acropolis

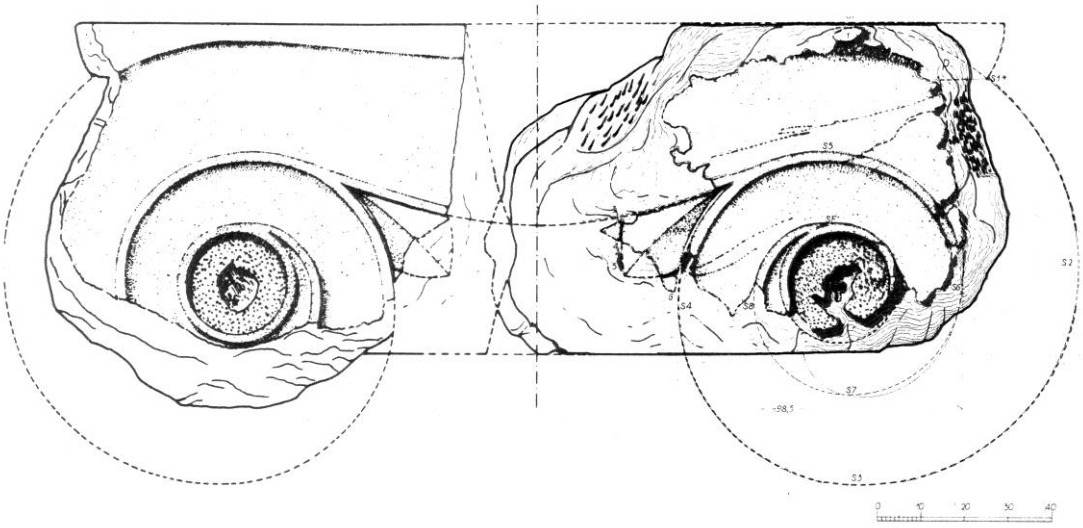


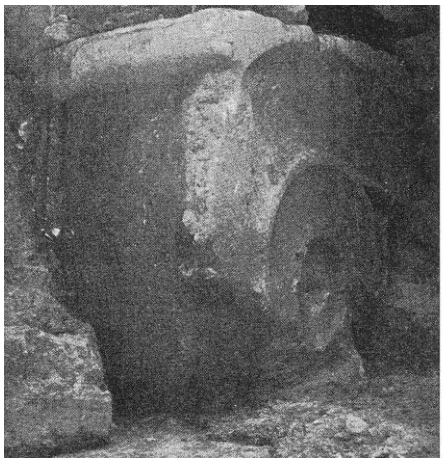
Last quarter 6th century BC

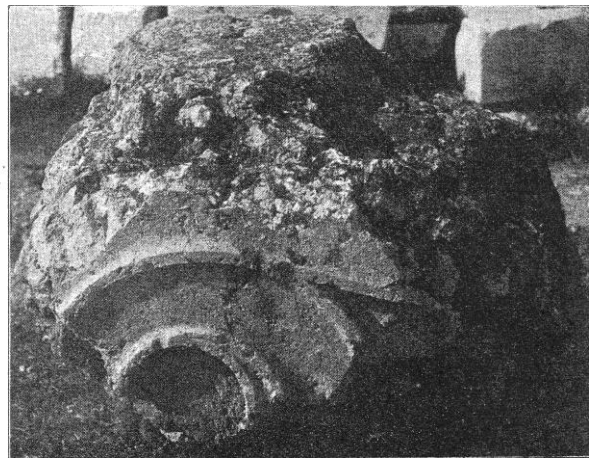
Acropolis Museum Inv. No. 136-4346-6506

McGowan, E. (1993): 114; Payne, H. Young, G. M. (1936): 28, taf. 44; Niemeyer, H. G. (1960):66-69; Donos, Dimosthenis (2008): 527-528; Kissas, K (2000): 228.

Athens, Kekropion







3rd quarter – end of 6th century BC

Acropolis Inv. No. 75 and 13302

Korres, Manolis (1997): 96; Wiegand, Theodor (1904):173; Donos, Dimosthenis (2008): 520-521.

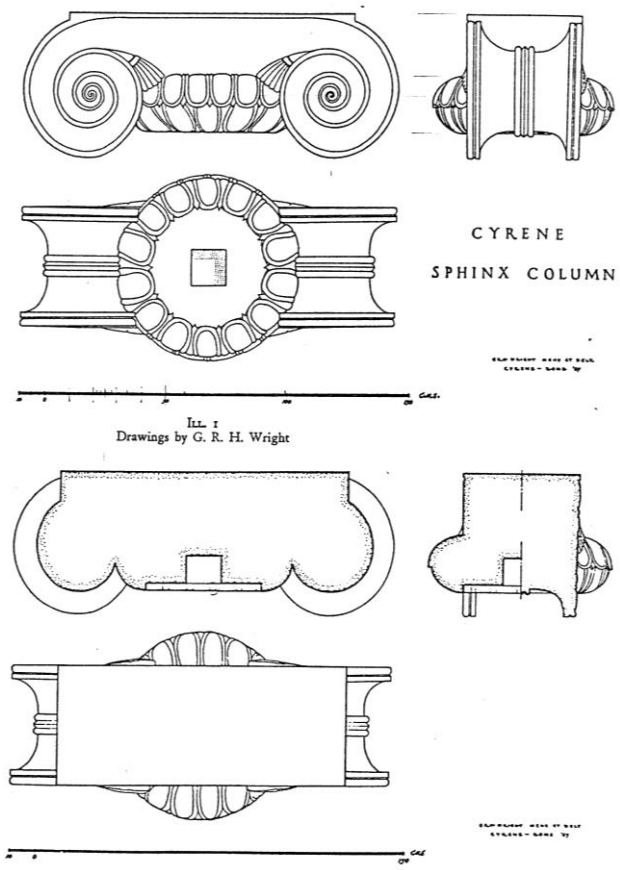
Appendix IIb

Corfu, Artemis

First quarter 6th century BC

Rodenwaldt, G. (1938): pl. 1; Schleif, H. Rodenwaldt, G. (1940): taf. 19; Barletta (2001): 83; Hoffelner (1996): 18.

Cyrene

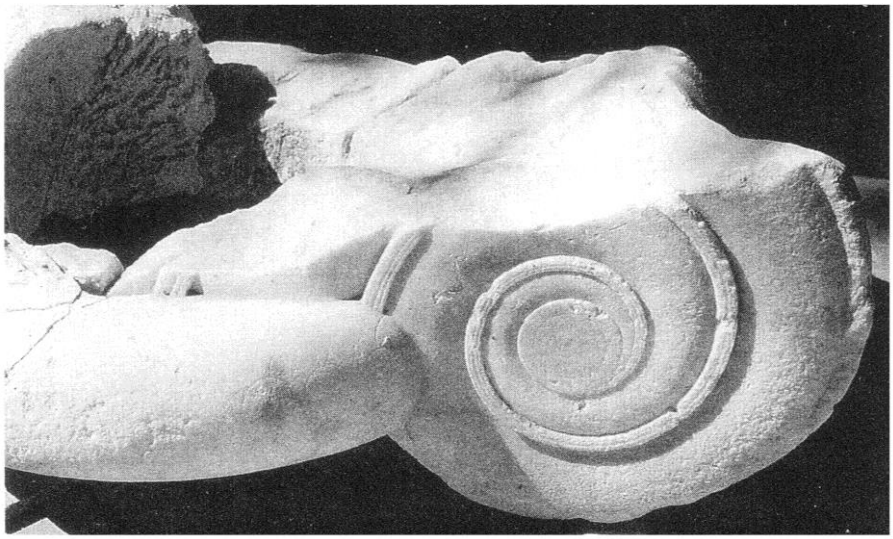


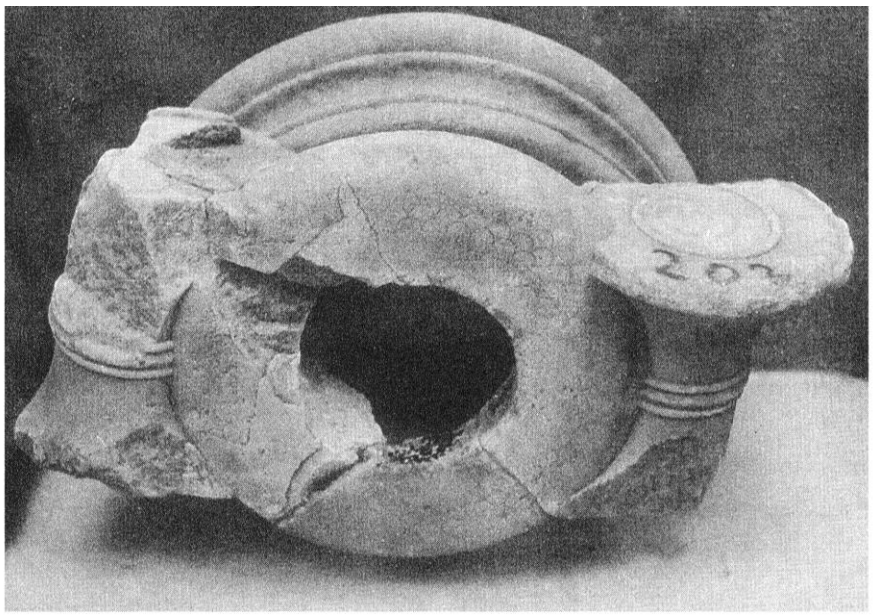
2nd quarter 6th century BC

Goodchild, R. G. Pedley, J. G. White, D. (1966-67): 190; White, D. (1971): Ill. 1 and 2, 50; Stucchi, S. (1975): 29; Betancourt, P. (1977): 107; Floren, J. (1987): 185; Kirchhoff, Werner (1988): 25-26; Bakker, Karel E. (1999): Ion-14; Donos, Dimosthenis (2008): 598; Segal, Phoebe (2010): 166.

Appendix IIb

Delos



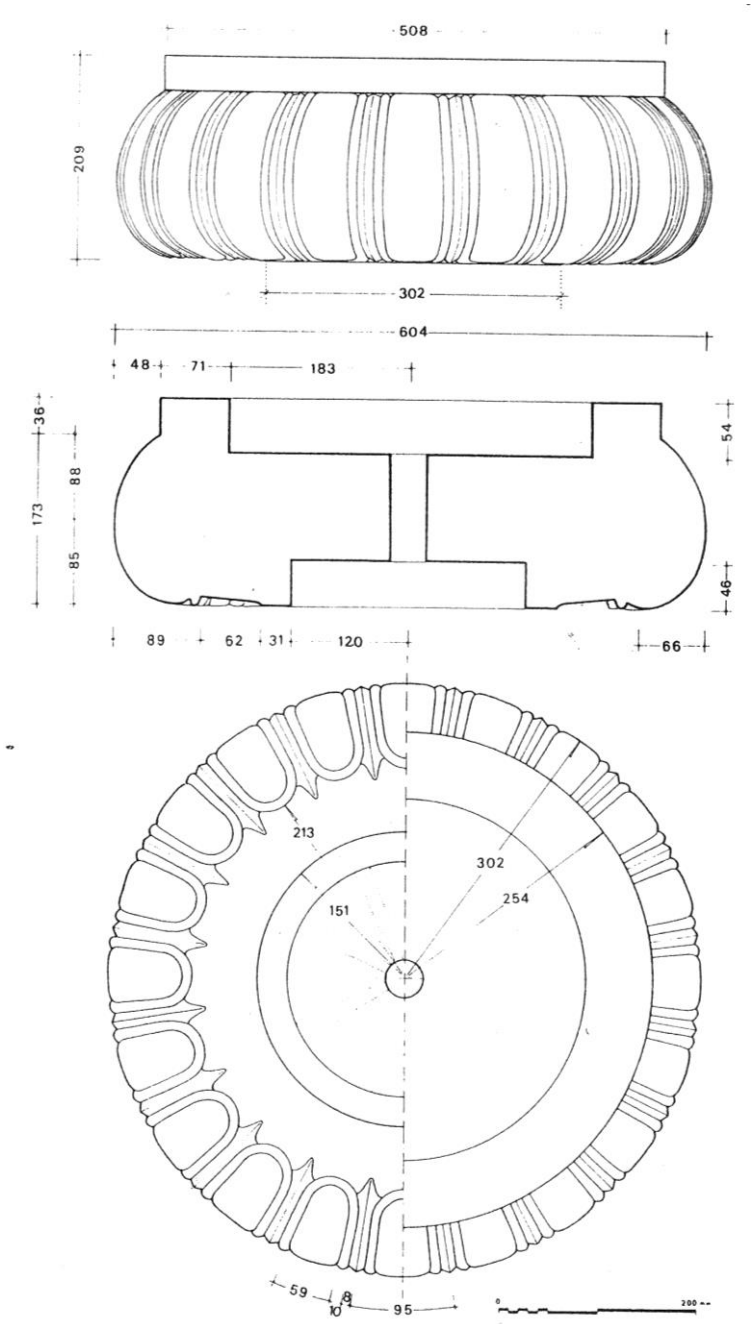


Mid. 6th century BC

Mus. Inv. 202

Bakker K. E. (1999): Iver-10; Ohnesorg, A. (1996): fig. 4a, b; Kirchhoff, W. (1988): 215: Dimosthenis, Donos (2008): 463; Vallois, R. (1966): no. 2.

Delos



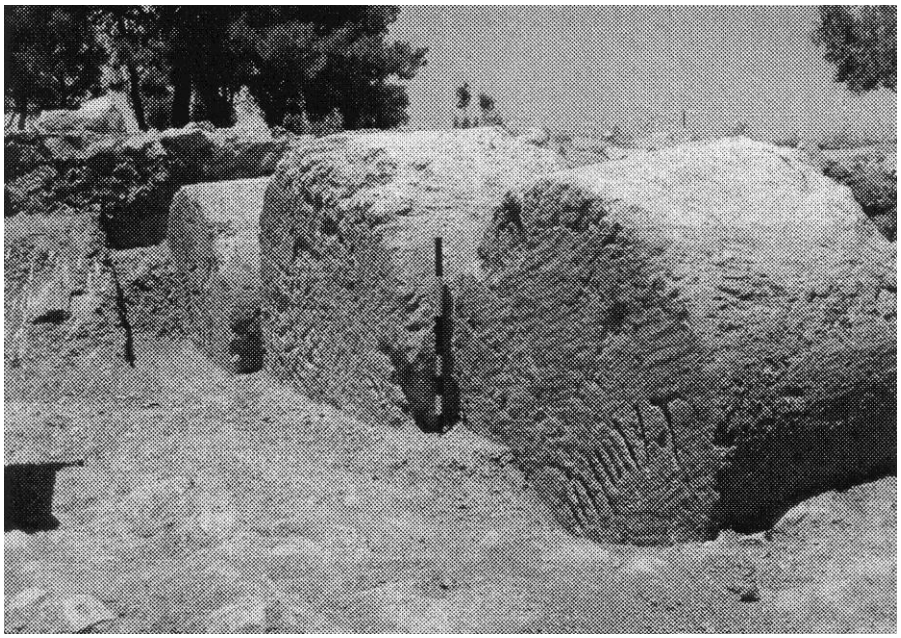
Mid-6th century BC

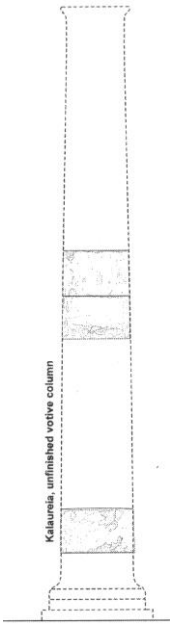
Delos Mus. 222

McGowan, E. (1993): pl. 22; Martin, R. (1973): 378, figs. 6-8; Kirchhoff, Werner (1988):199-200; Ohnesorg, Aenne (1993): 112; Hellmann, M.-C. (2002): 178; Bakker K. E. (1999): Cym-4; Segal, P. (2010): 161.

Appendix IIb

Kalaureia, sanctuary of Poseidon



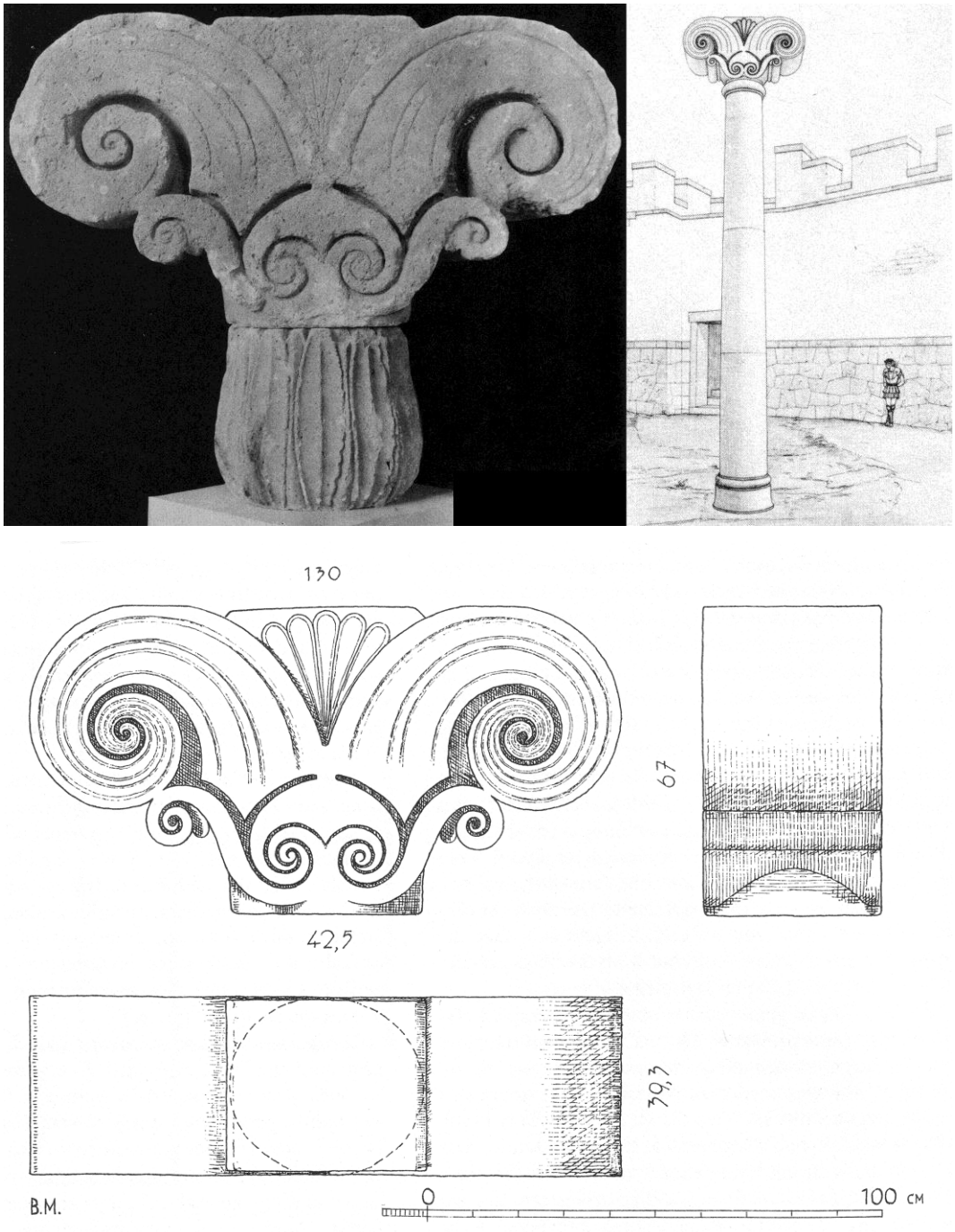


End 6th century BC

3 drums of the same column exist which are reconstructed by Pakkanen to a height of approx. 9.25 m (without capital).

Pakkanen, Jari (2010): 174.

Larisa



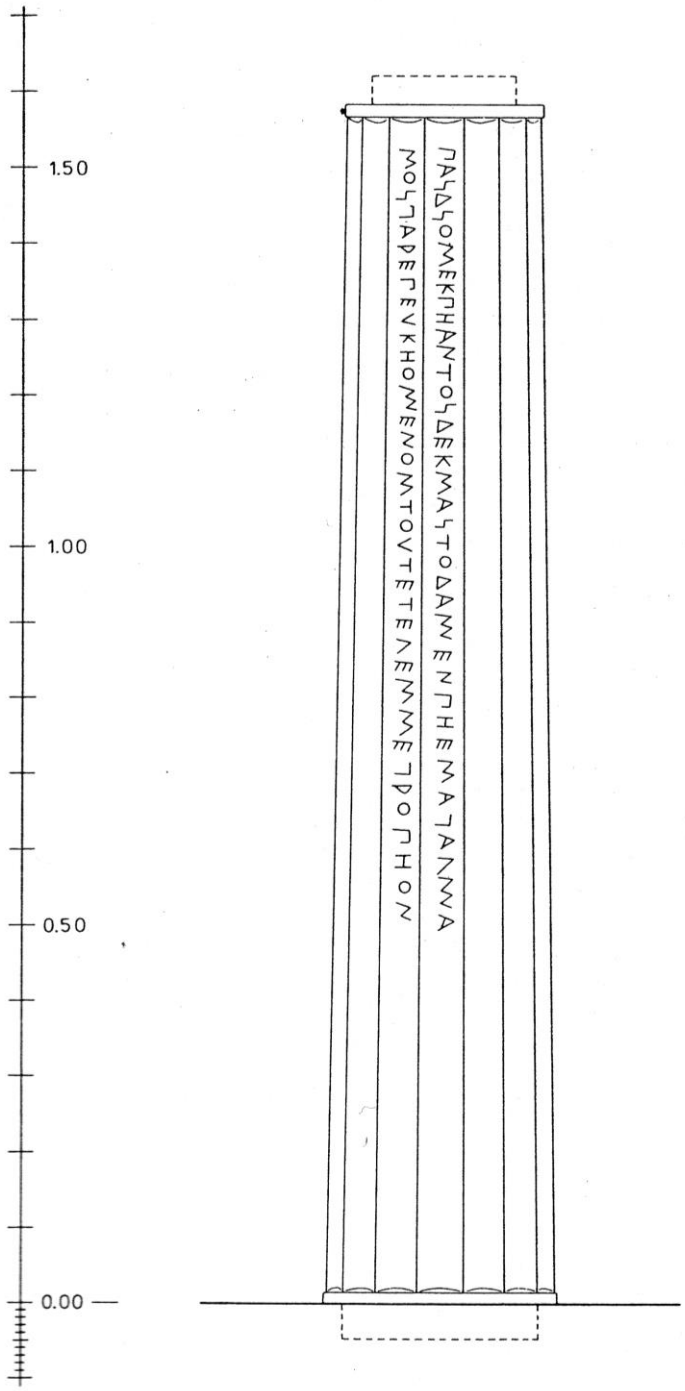
1st quarter 6th century BC

Istanbul Museum No. 1924

Schefold, K. (1940): plate 40; Wesenberg, Burkhardt (1971): taf. 153; Betancourt, Philip (1977): plate 42; Kirchhoff, Werner (1988): 222; Bakker, Karel E. (1999): Aeol-3; Donos, Dimosthenis (2008): 498-499; Segal, P. (2010): 168.

Appendix IIb

Melos

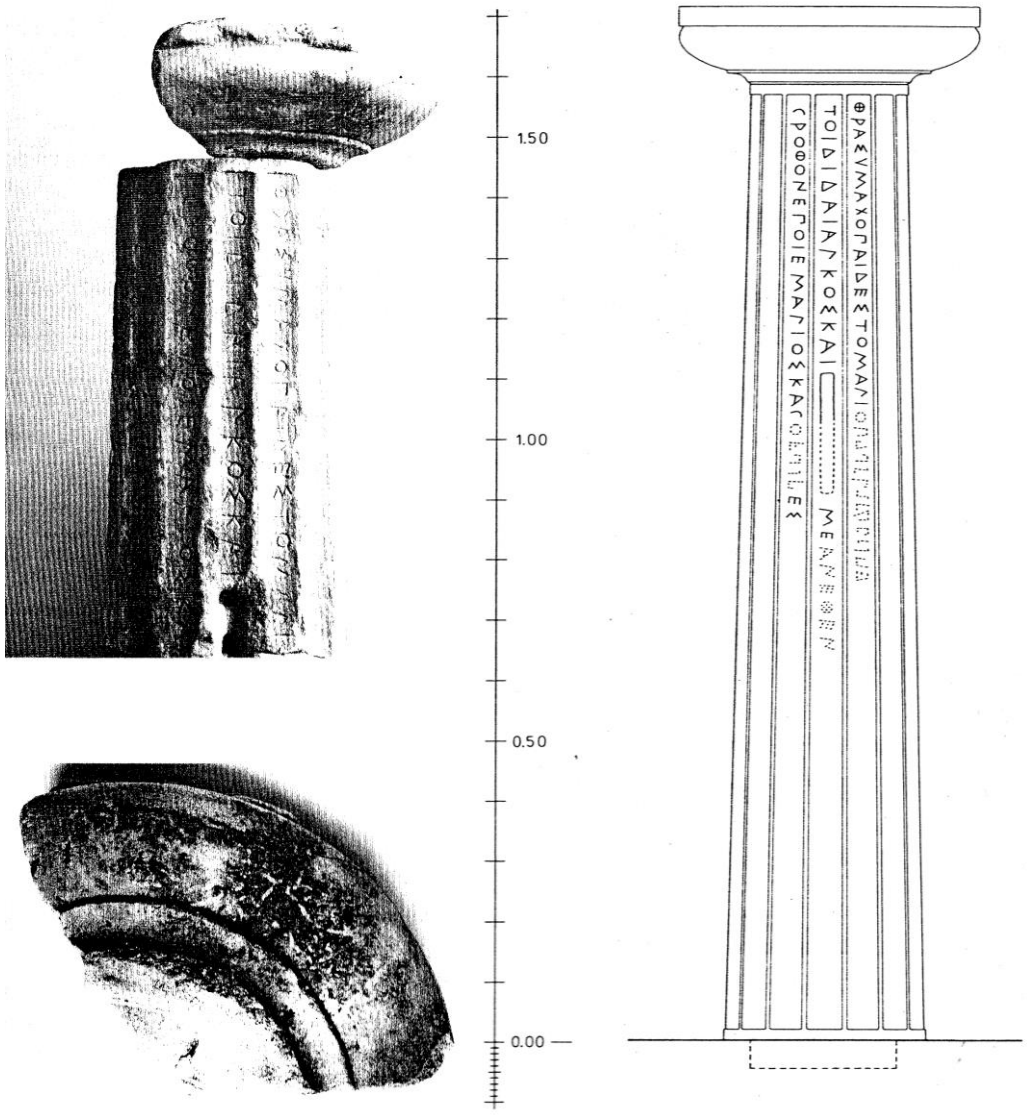


Last quarter 6th century BC

Pergamon Museum Berlin Inv. No. 1485

McGowan, E. (1993): 313-316; Herrmann, K. (1984): 131, abb.3; Jeffery, L. (1990): 320, 324; Lazzarini, M. L. (1976): 295; Segal, P. (2010): 182.

Olympia, sanctuary of Zeus



3rd quarter 6th century BC

Museum Olympia Inv. No. 405-978

McGowan, E. (1993): 317-319; Hermann, K. (1984): 132, abb. 1-3; Lazzarini, M. L. (1976); Schuller, M. (1985): 385; Jeffrey L. (1990): 320; Donos, Dimosthenis (2008): 581-582; Segal, P. (2010): 188.

Appendix IIb

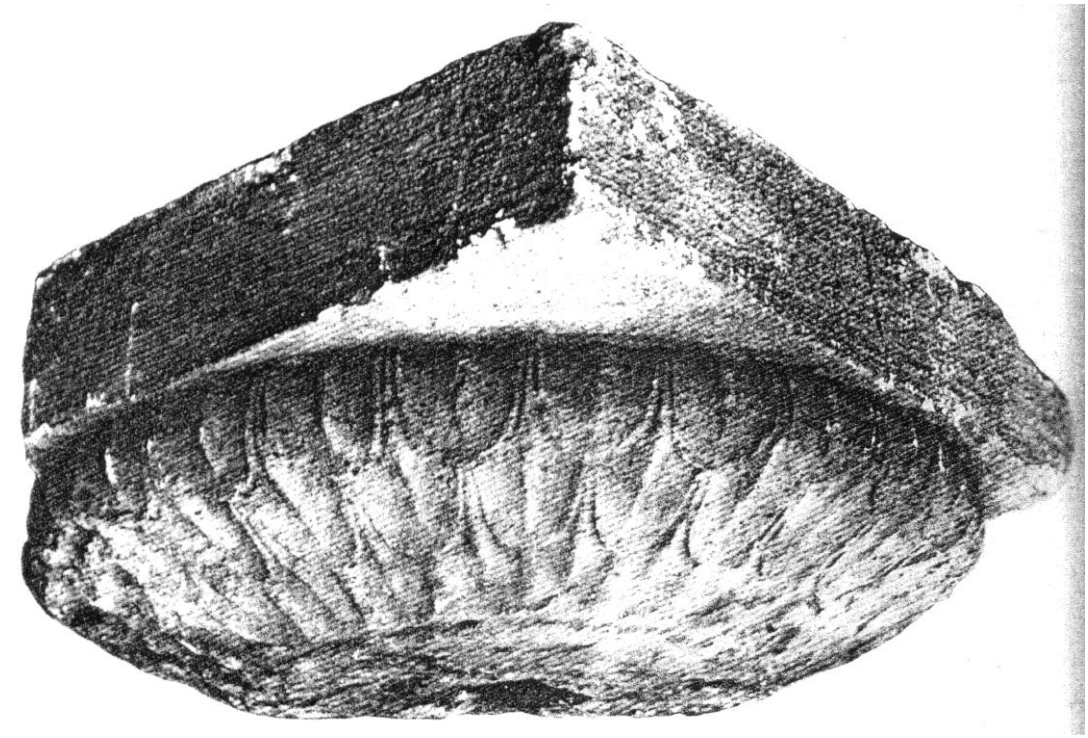
Paestum

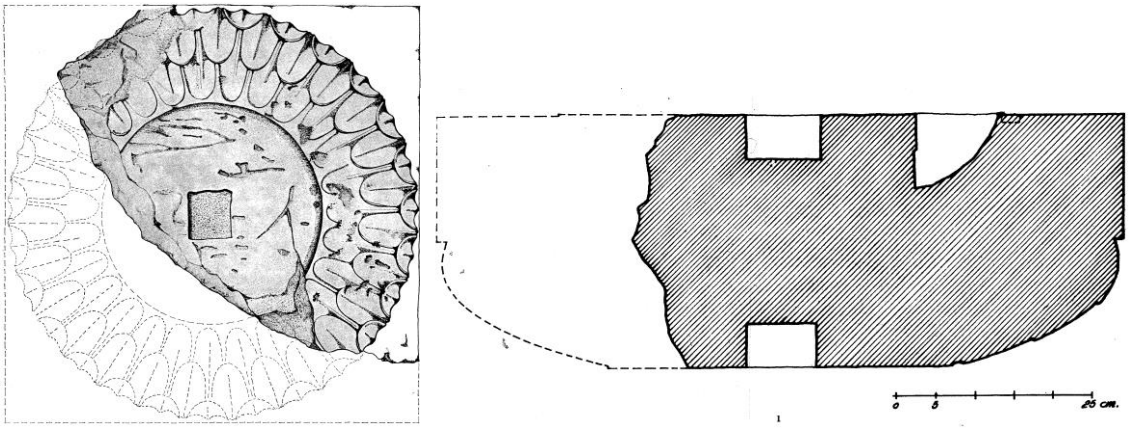
2nd quarter 6th century BC

The column shown in the picture is reconstructed. At site remain the foundations for another three columns *in situ*.

Doepner, D. (2002): 226; Pedley G. (1990): 59; Donos, Dimosthenis (2008): 590; Segal, Phoebe (2010): 189; Neutsch (1956): 384.

Phaistos



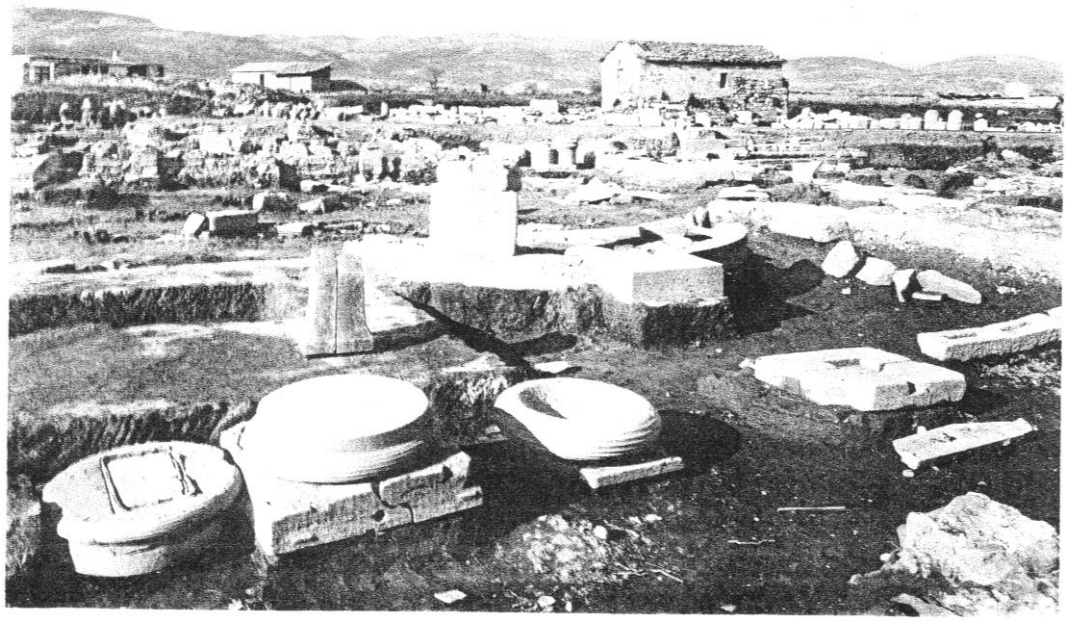


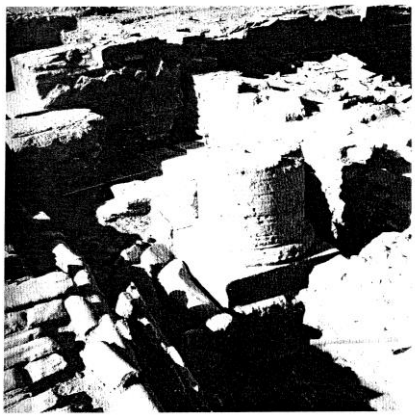
2nd quarter 6th century BC

Sjogren L. (2003): 33-34; LaRosa V. (1973-1974): 138-140; Vance Watrous L. and Hadzi-Vallianou D. (2004): 313-315; Segal P. (2010): 166.

Appendix IIb

Samos, sanctuary of Hera

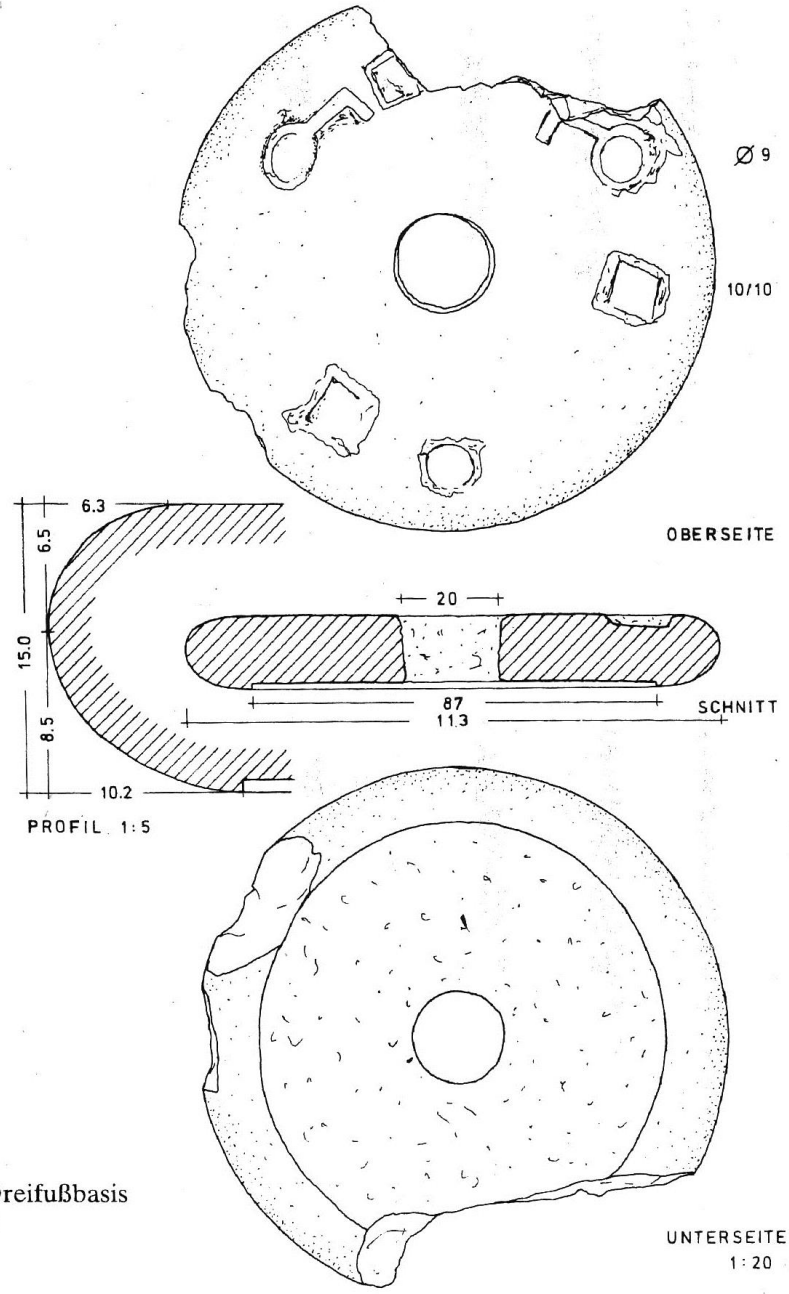




2nd quarter 6th century BC

Schede Martin (1929): taf. 9; Kienast, H. (1992); Isler, H. P. (1978); Kienast, H. (2002); McGowan E. (1993); Segal, P. (2010) 169.

Samos, sanctuary of Hera



Umzeichnung der Dreifußbasis
Abb. 15. M. 1 : 20

2nd quarter 6th century BC

Kienast, H. (1985): 385 Abb. 15-16; Kirchhoff, Werner (1988): 148; Donos, Dimosthenis (2008): 488-489.

Appendix IIb

Smyrna, sanctuary of Athena

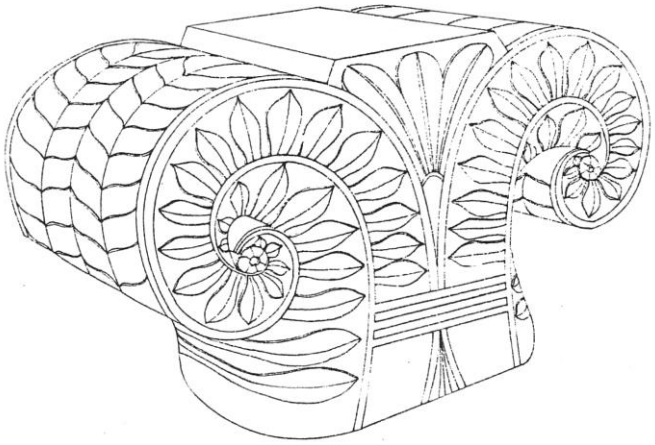


Fig. 4. The Temple of Athena. Vertically voluted capital. Tufa. 610 B.C.

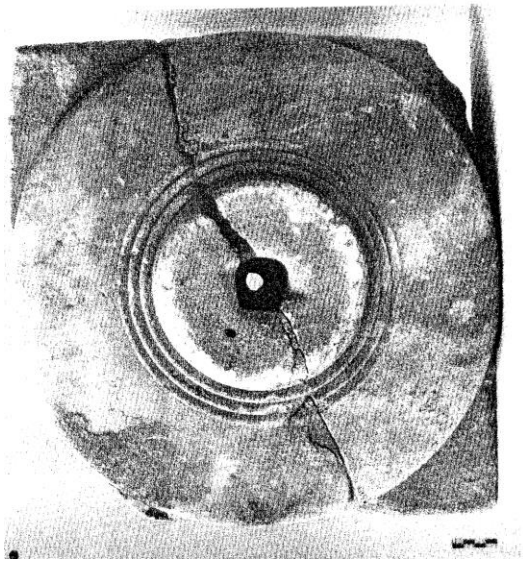
PILZFÖRMIGE KAPITELLE
MASSANGABEN

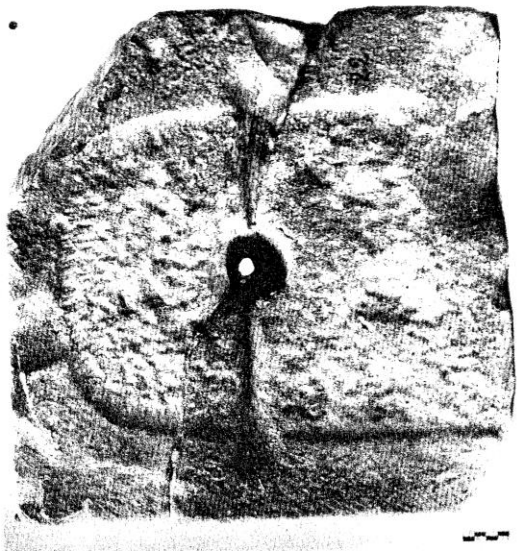
Kapitell–Typen	Unterer Durch-messer	Oberer Durch-messer	Höhe des unteren Teiles	Höhe des oberen Teiles	Breite der unteren Blätter	Breite der oberen Blätter
A	82.00	70.00	30.50	31.50	15.50	17,00
B	84.00	72.00	30.00	27.50	12.20	16.70
C	82.00		26.50	27.50	11.50	15.50
D	87.00				11.50	
E	79.00 80.00				8.50	
F	86.00				7.80	
G	81.00 82.00				11.00	
H	92.00				8.50	
I	81.00				8.50	
J	84.00 86.00				8.00	
K					12.00	
L				31.50		17.00
M				17.50		13.20
N				19.50		14.20
O						
P				23.00		
Q				35.00		

Last quarter 7th century BC

Akurgal, Meral (2007): 129; Cook, J. M. and Nicholls, R. V. (1998); Akurgal, Ekrem (1983): abb. 57and abb. 75.

Thebes, sanctuary of Apollo Ptoios





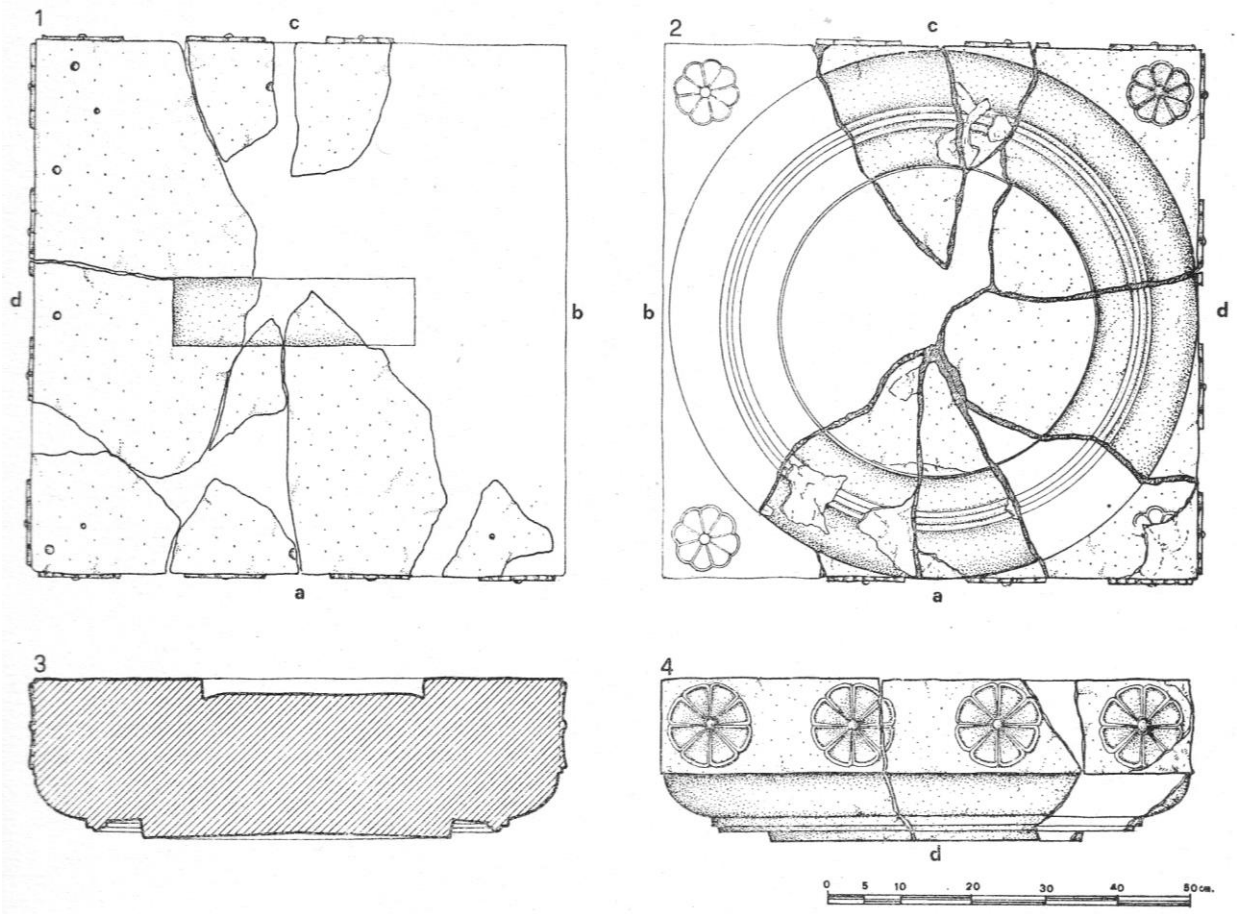
3rd quarter 6th century BC

Archaeological Museum Thebes, 633 and 633a

McGowan, E. (1993): 267-272; Neer, R. (2001): 282; Schachter, A. (1981): 65; Raubitschek, A. E. (1949): 338-339; Jeffrey, L. (1990): 73; Ducat, J. (1971): 242-251; Donos, Dimosthenis (2008): 502-503; Segal, P. (2010): 185.

Appendix IIb

Ugento, Zeus



2nd half 6th century BC

National Museum Taranto, 121327

Mattusch C. (1988): 65-70; Degrassi, Nevio (1981): 107; Donos, Dimosthenis (2008): 592-593; Segal P. (2010): 188.

Bibliography

Abbreviations

AA	*Archäologischer Anzeiger*
AJA	*American Journal of Archaeology*
AM	*Mitteilungen der Deutschen Archäologischen Instituts, Athenische Abteilung*
BAR	*British Archaeological Reports*
BSA	*Annual of the British School of Archaeology at Athens*
JDI	*Jahrbuch des Deutschen Arhäologischen Instituts*
JHS	*Journal of the Hellenic Society*
OJA	*Oxford Journal of Archaeology*

Ancient Sources

Apollonius of Rhodes: *Argonautica*

The Bible: King james ed.

Cicero: *De Legibus*

Herodotus: *The Histories*

Hesiod: *Theogony*
— *Works and Days*

Homer: *Iliad*
— *Odyssey*

Pausanias: *Descriptions of Greece*

Plini: *Naturalis Historiæ*

Plutarch: *Life of Theseus*

Sophocles: *King Oedipus*

Strabo: *Geographica*

Vitruvius: *De architectura libri decem.* Translated by Curt Fensterbusch 5th edition 1991, Darmstadt.

Modern Sources

Akurgal, Ekrem (1960): Vom äolischen zum ionischen Kapitell, *Anatolia* 5: 1-7.

— (1968): *The Birth of Greek Art. The Mediterranean and The Near East*, London. (1st. German ed. 1966).

— (1981): Früharchaische Kapitelle vom Tempel der Athena in Alt-Smyrna, *ASAtene* 59: 127-132.

— (1983): *Alt-Smyrna I. Wohnschichten und Athenatempel*, Ankara.

— (1992): Zur Entstehung des griechischen Greifenbildes. Froning, Hölscher, Mielsch, *Koitinos Festschrift für Erika Simon*. 33-52.

— (2001): *The Hattian and Hittite Civilisations*. Izmir.

Akurgal, Meral (2007): Hellenic Architecture in Smyrna 650-546 B.C. *Frühes Ionien: eine Bestandsaufnahme*. Panionion-Symposion Güzelçamlı, 26. September - 1. Oktober 1999 / herausgegeben von Justus Cobet ... [et al.]. Mainz. 125-136.

Altekamp, Stefan (1991): *Zu griechischer Architekturornamentik im sechsten und fünften Jahrhundert v. Chr.* (EurHss 37), Frankfurt.

Alzinger, Wilhelm (1972): Akragas und Kerkyra, Fixpunte der früharchaischen Cronologie?, *ΑΠΑΡΧΑΙ. Nuove ricerche e studi sulla Magna Grecia e la Sicilia antica in onore di Paolo Enrico Arias*, Pisa. 1: 113-120.

— (1978): Wandernde Künstler und ionische Spiralen in früharchaischer Zeit, *Classica et Provincialia. Festschrift Erna Diez*, ed. Gerda Schwarz and Erwin Pochmarski, Graz. 17-32.

— (1982): Tuscanicae dispositiones und griechische Tektonik, *Pro Arte Antiqua. Festschrift für Hedwig Kenner*, Vienna. 23-27.

Amandry, Pierre (1952): Observations sur les monuments de l'Heraion d'Argos, *Hesperia* 21: 222-274.

— (1953): *La Colonne des Naxiens et le Portique des Athéniens*, (FDelphes, Tome II, Topographie et Architecture), Paris.

Andrae, Walter (1930): *Das Gotteshaus und die urformen des bauens im alten Orient*. Berlin.

Antonaccio, Carla M. (1992): Terraces, Tombs, and the Early Argive Heraion, *Hesperia* 61: 85-105.

— (1995): *An Archaeology of Ancestors. Tomb Cult and Hero Cult in Early Greece*, Lanham and London.

— (2003): Hybridity and the Cultures within Greek Culture, *The Cultures within Ancient Greek Culture: Contact, Conflict, Collaboration*, ed. Carol Dougherty, Leslie Kurke, Cambridge and New York: 57-74.

Arafat, K. W. (1995): Pausanias and the temple of Hera at Olympia, *BSA* 90: 461-473.

Aravantinos, Vassilios (2010): *The Archaeological Museum of Thebes*. John S. Latsis Public Benefit Foundation, Athens.

Arnold, Dieter (1997): *Lexikon der ägyptischen Baukunst.* 2. Auflage. Artemis & Winkler, München u. a.
— (1996): *Die Tempel Ägyptens.* Augsburg.

Astour, Michael C. (1967): *Hellenosemitica: an ethnic and cultural study in west Semitic impact on Mycenaean Greece*, Leiden.

Aubet, María E. (1993): *The Phoenicians and the West: politics, colonies and trade*, Cambridge (1st Spanish ed. 1987).

Bahnassi, Afif (1987): Das alte Syrien und seine Kunst. Leipzig.

Bakker, Karel A. (1999): *A corpus of early Ionic capitals*, diss., University of Pretoria.

Bammer, Anton (1972): *Die Architektur des jüngeren Artemision von Ephesos*, Wiesbaden.
— (1984): *Das Heiligtum der Artemis von Ephesos*, Vienna.
— (1990): A *Peripteros* of the Geometric Period in the Artemision of Ephesus, *Anatolian Studies* 40: 137-160.
— (2004): Mykene und der Ephesische Peripteros, *Traversari festschrift*

Barletta, Barbara A. (2001): *The Origins of the Greek Architectural Orders*, Cambridge and New York.

Bauks, Michaela (2010): *Jachin und Boas*. www.wibilex.de.

Beazeley, J.D. (1951): *The development of attic black-figure*. 21 Plate 8.2 / New York GR 521.

Beekes, Robert S. P. (2003): The Origin of Apollo, *Journal of Near Eastern Religions* 3: 1-21.

Bentz, Martin (1998): *Panathenaische Preisamphoren. Eine athenische Vasengattung und ihre Funktion vom 6.-4. Jahrhundert v.Chr.* Basel.

Bernal, Martin (1987): *Black Athena. The Afroasiatic Roots of Classical Civilization, 1. The Fabrication of Ancient Greece 1785-1985*, New Brunswick and London.

— (1991): *Black Athena. The Afroasiatic Roots of Classical Civilization, II. The Archaeological and Documentary Evidence*, London.

— (2001): *Black Athena writes back. Martin Bernal responds to his critics*, Durham and London.

Betancourt, Philip (1977): *The Aeolic Style in Architecture. A survey of its development in Palestine, the Halicarnassos peninsula, and Greece*, Princeton.

Beyer, Immo (1974): Die Reliefgiebel des alten Athena-Tempels der Acropolis. *AA JdI 89* 639-51.

Boardman, John (1959): Chian and Early Ionic Architecture, *AntJ* 39.

— (1974): *Athenian Black Figure Vases*, New York.

— (1998): *Early Greek vase painting*, New York.

Boehlau, J. and Karl Schefold (1940): *Larisa am Hermos, I*, Berlin.

Borrmann, Richard (1888): Altionische Kapitelle, *AntDenk* I: 15-16.

Bötticher, Karl (1874): *Die Tektonik der Hellenen*², 2 vols., Potsdam 1874 (1st ed. 1844-1852).

Bommelaer, Jean-François and Didier Laroche (1991): *Guide de Delphes. Le site* (École Française d'Athènes, Sites et Monuments 7), Paris.

Brulotte, Eric L. (1994): The 'Pillar of Oinomaos' and the location of Stadium I at Olympia, *AJA* 98: 53-64.

Bundgaard, J. A. (1976): *Parthenon and the Mycenaean City on the Heights*. Copenhagen.

Burkert, Walter (2009): *Die Griechen und der Orient*, München (1 ed. 2003).
— (1992): *The Orientalizing Revolution. Near eastern influence on Greek culture in the early archaic age,* Cambridge, Ma. (1st German ed. 1984).

Buschor, Ernst (1930): Heraion von Samos: Frühe Bauten, *AM* 55: 1-99.

Buschor, E. und Schleif, H. (1934): Der Altarplatz der Frühzeit. *AM 58.*

Busink, Th. A. (1970): *Der Tempel von Jerusalem*, 2 vols, Leiden.

Bremmer, Jan N. (2008): *Greek Religion and Culture, the Bible and the Ancient Near East*, Leiden and Boston.

Carpenter, T.H. (1983): On the Dating of the Tyrrenian Group. *OJA* 2 279-293

Carter, Jane B. and Laura J. Steinberg (2010): Kouroi and Statistics, AJA 114: 103-128.

Chipiez, Charles (1876): *Histoire critique des origines et de la formation des ordres grecs*, Paris.
— see Perrot

Clarke, J. T. (1886): A proto-Ionic Capital, *AJA* pp. 1-20
— (1886): A Doric Shaft and Base Found at Assos. *AJA* 267 -285

Cockerell (1884): *Le Temple de Jupiter Panhellenien a Egine*,

Coldstream, J. Nicholas (1977): *Geometric Greece*, New York.

Cook, R. M. (1946): Ionia and Greece in the Eight and Seventh Centuries B. C. *The Journal of Hellenic Studies* 66. 67-98

Cook J. M. and Nicholls R.V. (1998): *Old Smyrna Excavations: The temples of Athena*. The British School at Athens, London.

Coste-Messelière, Pierre de la (1936): *Au Musée de Delphes. Recherches sur quelques monuments archaïques et leur décor sculpté*, Paris.
— (1943): *Delphes*, Paris.
— (1963): Chapiteaux doriques du haut archaïsme, *BCH* 87: 639-652.

D'Alton, Martina (1993): *The New York Obelisk.* The Metropolitan Museum of Art

Daux, G. (1961): Chronique der Fouilles et decourvertes archeologiques en Grece en 1960, *BCH* 86: 629-975.

— (1963): Chronique der Fouilles et decourvertes archeologiques en Grece en 1962, *BCH* 87: 689-879.

Degrassi, Nevio (1981): *Lo Zeus stilita di Ugento*, Rome. Bretschneider.

Dieterle, M. (2007): *Dodona: Religionsgeschichtliche und historische Untersuchungen zur Entstehung und Entwicklung des Zeus-Heiligtums.* Hildesheim/New York.

Dietrich, Bernard C. (1974): *The Origins of Greek Religion*, Berlin and New York.

Dinsmoor, William Bell (1947): The Hekatompedon on the Athenian Acropolis, *AJA 51*. 109-151.

— (1975): *The Architecture of Ancient Greece. An Account of its Historic Development*², New York (1st ed. 1950).

— (1961): The Basis of Greek Temple Design: Asia Minor, Greece, Italy, *Atti del VII Congresso Internazionale di Archeologia Classica*, con., Naples. 355-368.

Dörpfeld Wilhelm (1887): Der alte Athenatempel auf der Akropolis, *AM* 12: 190-211.

Doepner, Daphni (2002): Steine und Pfeiler für die Götter: Weihgeschenkgattungen in westgriechischen Stadtheiligtümern. Wiesbaden.

Donderer Michael (2005): Das Heraion in Olympia und sein Säulenkranz, *BABesch80.* 7-16.

Donos, Dimosthenis (2008): *Studien zu Säulen- und Pfeilermonumenten der archaischen Zeit*. Hamburg.

Drerup, Heinrich (1969): *Griechische Baukunst in geometrischer Zeit.* Göttingen.

Ducat, Jean (1971): *Les Kouroi du Ptoion. Le sanctuaire d'Apollon Ptoiens à l'époque archaïque*, Paris.

Dunbabin, Thomas J. (1948): The Early History of Corinth, *JHS* 68: 59-69.
— (1957): *The Greeks and their Eastern Neighbours*, London (2nd ed. 1979).
— (1962): *Perachora II. The Sanctuaries of Hera Akraia and Limenia: the pottery, ivories, scarabs and other objects from the votive deposit of Hera Limenia*, Oxford.

Durm, Josef (1910): *Baukunst der Griechen*, Leipzig (1st edition 1881, Darmstadt).

Eckhart, Lothar (1953): Bemerkungen zu dorischen Säulen auf archaischen griechischen Vasen, *ÖJh* 40: 60-72

Ehringhaus, Horst (2005): *Götter, Herrscher, Inschriften – Die Felsreliefs der hethitischen Grossreichszeit in der Türkei*. Mainz.

Evans, Arthur J. (1901): The Mycenaean Tree and Pillar Cult and its Mediterranean Relations, *JHS* 21: 99-204.
— (1921-1936): *The Palace of Minos at Knossos*, London (vol. 1 1921; vol. 2 1928; vol. 3 1930; vol. 4. 1936).

Floren, J. (1987): *Die Griechische Plastik*. Vol. 1 München, C. H. Beck.

Frankfort, Henri (1941): The Origin of Monumental Architecture in Egypt, *The American Journal of Semitic Languages and Literatures* 58: 329-358.
— (1954): *The Art and Architecture of the Ancient Orient*, Harmondsworth (later ed.s 1970 and 1996).

Furtwängler, Adolf (1890): *Die Bronzen und die übrigen kleineren Funde* (Olympia IV), Berlin.
— (1906): *Aegina, das Heiligthum der Aphaia*. München.

Giraud, Demosthenes (1994): Study for the restoration of the temple of Athena Nike, Volume 1 a-b. in: Babanika K.; *Architectural study for the restoration of the building.*

Goodchild, R. G. Pedley, J. G. White, D. (1966-67): Recent Discoveries of Archaic Sculpture at Cyrene. A Preliminary Report. *LibyaAnt* 3-4. 179-198.

Goodyear, William H. (1891): *The Grammar of the Lotus...*

Gruben, Gottfried (1963): Das archaische Didymaion, *JdI* 78: 78-177.
— (1965): Die Sphinx-Säule von Aigina, *AM* 80: 170-208. *Klassische Bauforschung* 2007. München. 110-155.
— (1966): *Die Tempel der Griechen*, München (5th edition 2001).
— (1972): Kykladische Architektur, *Münchner Jahrbücher* 23. 7-36.
— (1989): Das älteste marmorene Volutenkapitell, *IstMitt* 39: 161-172.
— (1993): Die inselionische Ordnung, *Les grands ateliers d'architecture dans le monde égéen du VIe siècle av. J.-C.*, ed. Jacques des Courtils and Jean-Charles Moretti (Varia Anatolica III), con., Istanbul, 1991, Paris 1993. 97-109 .
— (1996): Die entstehung des griechischen Tempels. *Klassische Bauforschung* 2007. München. 66-109.
— (1996b): Griechische Un-Ordnungen, *Säule und Gebälk. zu Struktur und Wandlungsprozess griechisch-römischer Architektur*. Mainz. 61-77.
— (1997): Naxos und Paros. Studien zur archaischen Architektur der Kykladen, *JdI* 112: 261-416.
— (2000): Klassische Bauforschung, A.H. Borbein – T, Hoelscher – P Zanker, *Klass. Archaeologie* 251-279. *Klassische Bauforschung* 2007. München. 32-65.

Guralnick, Eleanor (1978): The Proportions of Kouroi, *AJA* 82: 461-472.
— (1981): The Proportions of Kourai, AJA 85: 269-280.
— (1996): The Monumental New Kouros from Samos. Measurements, Proportions and Profiles, *AA*: 505-526.
— (1997): The Egyptian-Greek Connection in the 8th to 6th Centuries BC: An Overview, *Greeks and Barbarians. Essays on the interactions between Greeks and non-Greeks in antiquity and the consequences for eurocentrism*, ed. John E. Coleman and Clark A. Walz, Bethseda.: 127-154.
— (2004): A Group of Near Eastern Bronzes from Olympia, *AJA* 108: 187-222.

Hägg, Robin (1986): Die göttliche Epiphanie im minoischen Ritual. AM 101. 41-62.

Hampe, Roland and Erika Simon (1981): *The Birth of Greek Art*, New York.

Hasserodt, Monika (2009): *Griechische und orientalische Metallphialen des frühen ersten Jahrtausends v. Chr. in Griechenland*. Bonn.

Heberdey, Rudolf (1919): *Altattische Porosskulptur. Ein Beitrag zur Geschichte der archaischen griechischen Kunst*, Vienna.

Heinhold-Kramer, Susanne (2004): Ist die Identität von Iloas und Wiluša endgültig erwiesen?. *Studi micenei ed egeo-anatolici 46.* 29-57.

Hellmann, Marie-Christine (1992): *Recherches sur le vocabulaire de l'architecture grecque, d'après les inscriptions de Délos* (BEFAR 278).
— (2002): *L'Architecture grecque. 1. Les principes de la construction*, Paris.
— (2006): *L'Architecture grecque. 2. Architecture religeuse et funéraire*, Paris.

Hellner, Nils (2004): Drehspuren am Säulenbauteil des archaischen Heraion von Argos? Revue archeologique 69-78.
— (2010): Die Anfänge des griechischen Tempelbaus und die Gestaltungsidee der Säulenkannelur in Kalapodi/Phokis (GR). *Bericht über die 45. Tagung für Ausgrabungswissenschaft*, Stuttgart. 153-160.

Hennemeyer Arnd (2006): *Das Athenaheiligtum von Priene.* Universität München.

Herdt, Georg et al (2014): Reassessing ancient building components. *CAA 2012: Computer Applications and Quantitative Methods in Archaeology. Proceedings of the 40th Conference, Southampton March 2012*.

Herdt, Georg and Wilson Jones, Mark (2008): Scanning Ancient Building Components. *PFG* 4/2008. 245-251
— (2010): Wunder der Baukunst – neu erfasst. *Antike Welt* 1/2010. 78-83

Herrmann, Georgina (1996): *Furniture of Western Asia, ancient and traditional*. Mainz.

Herrmann, Klaus (1984): Spätarchaische Votivsäulen in Olympia, *AM* 99: 121-143
— (1996); Anmerkungen zur Ionischen Architektur in der Peloponnes. *Säule und Gebälk*. 124-132

Hertel, Dieter (2003): *Die Mauern von Troia: Mythos und Geschichte im antiken Ilion.* München.

Himmelmann, Nikolaus (2002): Frühe Weihgeschenke in Olympia, *Olympia 1875-2000, 125 Jahre Deutsche Ausgrabungen*, Berlin ed. Kyrieleis, Helmut, Mainz. 91-107

—— (2005): *Grundlagen der griechischen Pflanzendarstellung.* Paderborn.

Hittorff, Jacques-Ignaz and Ludwig Zanth (1870): *Recueil des monuments de Ségeste et de Sélinonte suivi de recherches sur l'origine et le développement de l'architecture religieuse chez les grecs,* 2 vols., Paris.

Hölscher, Tonio (2001): Schatzhäuser – Banketthäuser?. *Festschrift für Jörg Schäfer*, Ergon verlag. 143-152

Hoffman, Gail L. (1997): *Imports and Immigrants. Near Eastern Contacts with Iron Age Crete*, Ann Arbor.

Howe, Thomas Noble (1985): *The Invention of the Doric Order*, diss., Harvard University, Ann Arbor.

Hübsch, Heinrich (1822): *Über griechischer Architektur*.

Hurwit Jeffrey M. (1999): *The Athenian Acropolis – History, mythology, and archaeology from the Neolithic era to the present*. Cambridge.

Hoffelner, Klaus (1996): *Alt-Ägina II,4 Die Sphinx-säule. Votivträger, Altäre, Steingeräte.* Mainz.
—— (1999): *Alt-Ägina I,3 Das Apollon-Heiligtum.* Mainz.

Homolle, Théophile (1909): Art Primitif. Art Archaique du Peloponnese et des Iles. *Fouilles des Delphes* IV. Paris.

Howe, Thomas Noble (1985): *The Invention of the Doric Order*, diss., Harvard University, Ann Arbor.

Howes Smith, P. H. G. (1984): Bronze Ribbed Bowls from Central Italy and Etruria, *BABesch* 59: 73-112.

Isler, H. P. (1978): *Das Archaische Nordtor und seine Umgebung im Heraion von Samos*. Samos IV. Bonn.

Iversen, Erik (1975): *Canon and Proportion in Egyptian Art*, Warminster.

Jacob-Felsch, Margrit (1969): *Die Entwicklung griechischer Statuenbasen und die Aufstellung der Statuen*, Waldsassen. Stiftland Verlag.

Jeffrey, L. (1990): *Local Scripts of Archaic Greece. A Study of the Origin of the Greek Alphabet and its Development*. Rev. Ed. Supplement. Oxford.

Jones, Owen (1856): *The Grammar of Ornament*, London.

Kalpaxis, Athanasios E. (1976): *Früharchaische Baukunst in Griechenland und Kleinasien*, Athens.

Kaltsas, N. (2002): *Sculpture in the National Archaeological Museum, Athens: Catalogue*. Athens, Kapon Editions.

Kienast, Hermann (1985): Ausgrabungen im Heraion von Samos 1980/81: Der architektonische Befund, *AA*: 367-404.

— (1992): Topographische Studien im Heraion von Samos. *AA*: 171-213.

— (1996): Die rechteckigen Peristasenstützen am samischen Hekatompedos. *Säule und Gebälk :. zu Struktur und Wandlungsprozess griechisch-römischer Architektur*. Mainz.

— (2002): Topography and architecture of the Archaic Heraion at Samos, *Excavating Classical Culture. Recent archaeological discoveries in Greece* (BAR 1031), ed. Maria Stamatopoulou and Marina Yeroulanou, Oxford. 317-325

Kilinski, Karl (1990): *Boeotian black figure vase painting of the archaic period*, Mainz.

Kirchhoff, Werner (1988): *Die Entwicklung des ionischen Volutenkapitells im 6. und 5. Jhd. und seine Entstehung*, diss., Bonn.

Kissas, Konstantin (2000): *Die attischen Statuen- und Stelenbasen archaischer Zeit*. Bonn.

Königs, Wolf (1980): Archaische Bauglieder aus Stein in Ionien. *Frühes Ionien: eine Bestandsaufnahme*. Panionion-Symposion Güzelçamlı, 26. September - 1. Oktober 1999 / herausgegeben von Justus Cobet ... [et al.]. Mainz. 669-680.

Kokkorou-Aleura, G. (1974): *Archaische Naxische Plastik*. PhD München.

Koldewey, Robert (1891): *Neandria*. Berlin G. Reimer.

Kontoleon, N. M. (1954): Excavations in Naxos. *Praktika*: 330-338.

— (1964): Archilochos und Paros, Foundations Hardt pour l'étude de l'antiquité classique. *Entretiens* 10: 39-73.
— (1968): Πάρια ιωνικά κιονόκρανα. *Αρχαιολογικά ανάλεκτα εξ Αθηνών* 1: 178-181.
— (1970): *Aspects de la Grece preclassique*. Paris. College de France.

Korfmann, Manfred O. (2006): *Troia: Archäologie eines Siedlungshügels und seiner Landschaft.* Mainz.

Korres, Manolis (1994): Recent Discoveries on the Acropolis, *Acropolis Restoration. The CCAM Interventions*, ed. Richard Ekonomakis, London. 174-179
— (1995): *From Pentelicon to the Parthenon*, Athens.
— (1997): Die Athena-Tempel auf der Akropolis, *The Development of the Polis in Archaic Greece*, ed. Lynette Mitchell, Peter J. Rhodes, London. 218-243
— (1997): An early Attic Ionian Capital and the Kekropeion on the Athenian Acropolis. *Greek offerings; essays on Greek art in honour of John Boardman* / edited by Olga Palagia – oxbow monograph 89. 95-107

Krischen, Fritz (1930): *Dorischer Stil.* Wasmuth Lexicon der Baukunst II.
— (1956): *Weltwunder der Baukunst in Babylonien und Jonien*, Tübingen.

Kyrieleis, Helmut (1969): *Throne und Klinen. Studien zur formgeschichte altorientalischer und griechischer Sitz- und Liegemöbel vorhellenistischer Zeit* (JdI supp. 24), Berlin.
— (1979): Babylonische Bronzen im Heraion von Samos, *JdI* 94: 32-48.
— (1988): Bronzener Bauschmuck, *Bathron. Beiträge zur Architektur und verwandten Künsten für Heinrich Drerup*, ed. Hermann Büsing and Friedrich Hiller, Saarbrücken 1988: 279-286.
— (1988b): Offerings of 'the Common Man' in the Heraion at Samos, *Early Greek Cult Practice*, ed. Robin Hägg, Nanno Marinatos, Gullög Nordquist (Proceedings of the 5th Int. Symposium at the Swedish Institute in Athens), con., Athens, 1986, Stockholm and Göteborg. 215-221.
— (1993): The Heraion at Samos, *Greek Sanctuaries. New approaches*, ed. Nanno Marinatos, Robin Hägg, London. 125-153.
— (1996): *Der grosse Kuros von Samos* (Samos X), Bonn.
— (ed. 2002): *Olympia 1875-2000, 125 Jahre Deutsche Ausgrabungen*, con., Berlin, 2000, Mainz.
— (2006): Anfänge und Frühzeit des Heiligtums von Olympia (OlForsch 31), Berlin.

— (2008): Der dorisch Triglyphenfries und die mykenische Architektur, *Original und Kopie. Formen und Konzepte der Nachahmung in der antiken Kunst*, con., Berlin, 2005, ed. Klaus Junker and Adrian Stähli, Wiesbaden. 199-212.

LARoche, Didier (2001): Examen croise de la maquette de l'Heraion d'Argos et de fragments d'architecture archaique a Delphes. *Maquettes architecturales de l'antique*. By Muller B. 321-329.

La Rosa, Vincenzo (1974): Capitello arcaico da Festòs, *Antichità cretesi, Studi in onore di Doro Levi* (Cronache di archeologia 12), Catania, vol. 2: 136-152.

Lambrinoudakis V. and Gruben, G. (1987): Das neuentdeckte Heiligtum von Iria auf Naxos. *AA*, 1987: 102-105.

Lambrinoudakis, Vassislis (1996): Beobachtungen zur Genese der ionischen Gebälkformen. *Säule und Gebälk. zu Struktur und Wandlungsprozess griechisch-römischer Architektur*. Mainz.

Layard, Austen Henry (1850): *Nineveh and its Remains*, London.
— (1853): *Discoveries in the ruins of Nineveh and Babylon*, London.

Lazzarini, M. L. (1976): Le formule delle dediche votive nella Grecia arcaica, *MemLinc Ser*. VIII,19: 47-354.

Lesky, Albin (1968): Homeros. Pauly/Wissowa, real-Encyclopaedie der classischen Altertumswissenschaft, Suppl.-Bd. 11, Stuttgart, 687-846.

Lippman M., Scahill D., Schultz P., (2006): Knights 843-59, the Nike Temple Bastion and Cleon's Shields from Pylos. *AJA* 110. 551-563

Louden, Bruce (2011): *Homer's Odyssey and the Near East*, Cambridge - New York.

Luce, Jean-Marc (2008): *L'aire du pilier des rhodiens (Fouille 1990-1992) à la frontière du profane et du sacre* (FdDelphes II), Paris.

Luschan, (1912): *Entstehung und Herkunft der ionischen Säule*, Leipzig.

Luschey, Heinz (1939): *Die Phiale*, Bleicherode am Harz.

Mallwitz, Alfred (1966): Das Heraion von Olympia und seine Vorgänger, *JdI* 81: 310-376.
— (1962): Cella und Adyton des Apollotempels in Bassai, *AM* 77: 140-171.
— (1972): *Olympia und seine Bauten*, Munich.
— (1981): *Ein Kapitell aus gebranntem Ton, oder zur Genesis des korinthischen Kapitells* (OlBericht 10), Berlin: 318-352.
— (1982): Ein hölzerner Untersatz aus Olympia. *Praestant Interna – Festschrift für Ulrich Hausmann*. Tübingen.

Marchand, Suzanne L. (1996): *Down from Olympus. Archaeology and Philhellenism in Germany, 1750-1970.* Princeton.

Marconi, Clemente (2004): Kosmos. The imagery of the Archaic Greek temple, *RES* 45: 209-224.
— (2009): Early Greek Architectural Decoration in Function, *Koine. Mediterranean Studies in Honor of R. Ross Holloway*, ed. Derek B. Counts and Anthony S. Tuck, Oxford: 4-17.

Mark, Ira S. (1993): The Sanctuary of Athena Nike in Athens: Architectural stages and chronology. *Hesperia Supplements, Vol. 26*

Markoe, Glenn (1985): *Phoenician Bronze and Silver Bowls from Cyprus and the Mediterranean*, Berkeley.
— (1996): The Emergence of Orientalizing in Greek Art: Some Observations on the Interchange between Greeks and Phoenicians in the Eighth and Seventh Centuries B.C., *BASOR* 301: 47-67.
— (2000): *Phoenicians*, London.

Martin, Roland E. (1955-1956): Problème des origines des ordres à volutes. *Etudes d'archéologie classique*, 1: 117-132.
— (1967): *Living Architecture: Greek*, Fribourg and London.
— (1973): Compléments a l'étude des chapiteaux ioniques de Délos, *BCH* supp. 1: 371-398.

Mattusch C. (1988): *Greek Bronze Statuary*. Ithaca. Cornell University Press.

Mazar, Amihai (1990): Archaeology of the land of the Bible, 10,000-586 B.C.E. New York, Doubleday.

Mazarakis Ainian, Alexandre (1988): Early Greek temples: Their origin and function, *Early Greek Cult Practice,* ed. Robin Hägg, Nanno Marinatos, Gullög Nordquist (Proceedings of the 5th Int. Symposium at the Swedish Institute in Athens), con., Athens, 1986, Stockholm and Göteborg. 105-119.

— (1997): *From rulers' dwellings to temples. Architecture, religion and society in Early Iron Age Greece (1100-700 B.C.)* (SIMA 121), Jonsered.

— (2001): From Huts to Houses in early Iron Age Greece, *From Huts to Houses. Transformations of Ancient Societies* (ActInstRom RegSueciae, 4° 56), con. Rome, 1997, ed. J. Rasmus Brandt and Lars Karlsson, Stockholm 2001: 139-161.

McGowan, Elizabeth P. (1993): *Votive Columns of the Aegean Islands and the Athenian Acropolis in the Archaic Period,* New York University

— (1995): Tomb marker and turning post: Funerary columns in the Archaic period. *AJA* vol.99, pp. 615-632.

Mertens, Dieter (1991): Bemerkungen zu Westgriechischen Monumentaltären, *L'éspace sacrificiel dans les civilizations méditerranéenes de l'antiquité,* con., Lyon, 1988, ed. Roland Étienne, Marie-Thérèse Le Dinahet, Paris. 187-191.

— (1993): *Der alte Heratempel in Paestum und die archaische Baukunst im Unteritalien*, Mainz.

Meurer, Moritz (1909): *Vergleichende Formenlehre des Ornamentes und der Pflanze: mit besonderer Berücksichtigung der Entwickelungsgeschichte der architektonischen Kunstformen*. Dresden.

Middleton, J. Henry (1886): A Suggested Restoration of the Great Hall in the Palace of Tiryns, *JHS* 7: 161-169.

Moret, Jean Marc (1984): Oedipe, la Sphinx et les Thebains: essay de mythologie iconographique. *Bibliotheca helvetica romana 23*, 193-231.

Morris, Ian (1994): Archaeologies of Greece, *Classical Greece: ancient histories and modern ideologies*, Cambridge: 8-47.

— (1999): *Archaeology as Cultural History. Words and Things in Iron Age Greece,* Oxford.

Morris, Sarah P. (1992): *Daidalos and the Origins of Greek Art*, Princeton.

Moscati, Sabatino, ed. (1988): *The Phoenicians,* cat. Venice, Milan.
— ed. (2000): *The Phoenicians,* Rizzoli.

Moustaka, Aliki (2002): On the Cult of Hera at Olympia, *Excavating Classical Culture. Recent Archaeological Discoveries in Greece*, ed. Maria Stamatopolou and Marina Yeroulanou, Oxford. 199-205.

Mustonen, S. and Pakkanen J. (2004): Partially Preserved Colonnades in Greek Architecture: The probability of matching Column Drums. *Making the Connection to the Past. CAA 99: Computer Applications and Quantitative Methods in Archaeology. Proceedings of the 27th Conference, Dublin, April 1999*, edited by K. Fennema and H. Kamermans, 57-59. Leiden: Faculty of Archaeology, Leiden University.

Mylonas, George (1966): *Mycenae and the Mycenaean age*, Princeton.

Naumann, Rudolf (1971): *Architektur Kleinasiens, von ihren Anfängen bis zum Ende der hethitischen Zeit*, Tübingen 1971 (1st ed. 1955).

Neer, R. T. (2001): Framing the Gift: Politics of the Siphnian Treasury at Delphi. *ClAnt* 20: 273-336.

Neils, Jennifer (1992): *Goddess and polis: the Panathenaic Festival in ancient Athens,* Princeton.
— (2005): *The Parthenon – from Antiquity to the Present*. New York.

Niemeyer, H. G. (1960): *Promachos: Untersuchungen zur Darstellung der bewaffneten Athena in archaischer Zeit*. Waldsassen.

Neutsch (1956): Archäologische Grabungen und Funde im Bereich der unteritalischen Soprintendenzen von Tarent, Reggio di Calabria und Salerno, 1949-1955. *AA*: 193-450.

Noegel, Scott B. (2007): Greek Religion and the Ancient Near East, Ogden 2007: 21-37.

Oenbrink, Werner (1997): *Das Bild im Bilde, zur Darstellung von Götterstatuen und Kultbildern auf griechischen Vasen*. Peter Lang, Frankfurt.

Ohnesorg, Aenne (1982): Der dorische Prostylos des Archilocheion auf Paros. *Archaeologischer Anzeiger* 271-290
— (1993): *Inselionische Marmordächer* (Denkmäler antiker Architektur 18.2), Berlin.
— (1993): Parische Kapitelle, *Greek Sanctuaries. New approaches*, ed. Nanno Marinatos, Robin Hägg, London. [Courtils]: 111-118.
— (1996): Votiv-oder Architektursäulen? *Säule und Gebälk. zu Struktur und Wandlungsprozess griechisch-römischer Architektur*. Mainz. 39-47.
— (2001): Ephesische Rosettenkapitelle, *Muss ed. 2001*: DAI ZÖst 1000a-37. 185-198.
— (2002): Das Problem der Eckkapitelle. Neue Forschungen zum archaischen Artemistempel von Ephesos, *Koldewey-Gesellschaft. Bericht über die 41. Tagung für Ausgrabungwissenschaft und Bauforschung*, con., Berlin 2000: 48-56.
— (2007): *Der Kroisos-Tempel*, OAW Wien

Oliver-Smith, Philip E. (1964): Representations of Aeolic Capitals on Greek Vases before 400 B.C., *Essays in Memory of Karl Lehmann*, ed. Lucy F. Sandler, Locust Valley NY. 232-241
— (1969): *Architectural Elements on Greek Vases before 400 BC*, diss., New York University.

Onians, John B. (1988): *Bearers of Meaning. The Classical Orders in Antiquity, the Middle Ages, and the Renaissance*, Princeton.

Oppenheim, Max Freiherr von (1931): *Der Tell Halaf, Eine Kultur im ältesten Mesopotamien.* Berlin.

Opitz, Dietrich and Anton Moortgat (1955): *Tell Halaf 3*, Berlin.

Orlandos, A.N. (1960): Paros. *Ergon*: 184-185.
— (1961): Excavations in the early Church on Paros. *Praktika*: 184-190.
— (1962): Paros. *Ergon*: 192-193.

Osborne, Robin (1996): *Greece in the Making, 1200-479 BC*, London.
— (1998): *Archaic and Classical Greek Art*, Oxford.

Østby, Erik (2001): Der Ursprung der griechischen Tempelarchitektur und ihre Beziehungen mit Aegypten, *Archaische griechische Tempel und Altägypten*, ed. Manfred Bietak, Vienna. 17-33

— (2006): Continuatio, Renovatio and Innovatio: The Birth of the Doric Temple. *Acta ad archaeologiam et atrium historiam pertinentia 20*. 9-38.

Pakkanen, Jari (2004): The temple of Zeus at Stratos: New Observations on the Building Design. *Arctos: Acta Philologica Fennica 38*: 95-121.

— (2009): Documentation and Computer Reconstruction Strategies in the Study of Architecture at the Sanctuary of Poseidon at Kalaureia, Greece. *Archäologie und Computer. Workshop 13: Kulturelles Erbe und Neue Technologien 03-05 November 2008*, edited by W. Börner and S. Uhlirzz. Wien: Museen der Stadt Wien-Stadtarchäologie.

— (2010): A tale of three drums: An unfinished Archaic votive column in the Sanctuary of Poseidon in Kalaureia. *Opuscula* 167-179.

Pakkanen, Jari and Pakkanen, Petra (2000): The Toumba building at Lefkandi: some methodological reflections on its plan and function, *BSA* 95: 239-252.

Papalexandrou, Nassos (2008): Boiotian Tripods, *Hesperia volume 77: no.2*

Papapostolou, Iannis A. (2010): Doch kein früher Ringhallen-Tempel in Thermos! *Antike Welt* 5/2010. 49-60.

Papastamos, Dimitrios (1970): *Melische Amphoren*. Munster/Westf.

Paris - Rome - Athenes. *Le voyage en Grèce des architects français aus xix^{e} et xx^{e} siècles*, cat. Paris (1982), Athens (1983), Houston (1983), New York (1984).

Payne, H. Young, G. M. (1936): *Archaic marble sculpture from the Acropolis: a photographic catalogue / by Humfry Payne and Gerard Mackworth Young; with an introduction by Humfry Payne*. London.

Pedley, John G. (1976): *Greek Sculpture of the Archaic Period, the Island Workshops*. Mainz.

— (1990): *Paestum. Greeks and Romans in Southern Italy*. London.

Penglase, Charles (1994): *Greek Myths and Mesopotamia. Parallels and Influence in the Homeric Hymns and Hesiod*, London.

Perrot, Georges and Charles J. Chipiez (1882-1914): *Histoire de l'Art dans l'Antiquité*, 10 vols., Paris.

Petrie, W. M. Flinders (1886): *Naukratis*. London.

Pfaff, Christopher (2003): Archaic Corinthian Architecture, ca. 600 to 480 B.C. Corinth, Vol. 20, *Corinth,* The Centenary: 1896-1996 (2003), 95-140.

Phillips, J. Peter (2002): *The columns of Egypt*.

Plommer, Hugh (1977): Shadowy Megara. *The Journal of Hellenic Studies*, Vol. 97. 75-83.

Popham, Mervyn R., P. G. Calligas and L. H. Sackett eds. (1993): *Lefkandi II: The Protogeometric Building at Toumba,Part 2: The Excavation, Architecture and Finds* (BSA Supp. 23), London and Athens.

Popkin, Maggie L. (2012): Roosters, Columns, and Athena on Early Panathenaic Prize Amphoras: Symbols of a New Athenian Identity. *Hesperia: The Journal of the American School of Classical Studies at Athens*, Vol. 81, 207-235.

Poulsen, F. (1920): *Delphi*. Transl. G. C. Richards. London.

Puchstein, Otto (1887): *Das Ionische Kapitell*, Berlin.

— (1907): *Die ionische Säule als klassisches Bauglied orientalischer Herkunft*, Leipzig.

Raubitshek, Anthony E. (1938): Zur Technik und Form der altattischen Statuenbasen, *Bulletin de l'Institut Archéologique Bulgare 12*: 132-179.

— (1943): Early Attic Votive Monuments, *BSA* 40: 17-37.

— (1949): *Dedications from the Athenian Acropolis. A Catalogue of the Inscriptions of the Sixth and Fifth Centuries*, Cambridge Mass..

RGG (4th ed.): *Religion in Geschichte und Gegenwart*. Mohr Siebeck 4th edition 1998-2007.

Rhodes, Robin F. (2011): The Woodwork of the Seventh Century Temple on Temple Hill in Corinth. *Holztragwerke der Antike,* ed. Alexander von Kienlin, Istanbul. 109-123.

Riegl, Alois (1893): *Stilfragen*. (reprint 1975) Georg Olms.

Rodenwaldt, Gerhard (1938): *Altdorische Bildwerke in Korfu*

Rumscheid, Frank (1999): Von Wachsen antiker Säulenwälder. Zu Projektierung und Finanzierung antiker Bauten in Westkleinasien und anderswo, *JdI* 114: 23-63.

Rutherford, Ian (2001): *Pindar's Paeans*, Oxford.

Rutkowski, Bogdan (1981): Frühgriechische Kultdarstellungen. *AM Beiheft 8*

Röllig, Wolfgang (1992): Achäer und Trojaner in hethitischen Quellen? *Troia : Brücke zwischen Orient und Okzident*. Attempto Verlag, Tübingen, 183-200.

Rykwert, Joseph (1996): *The Dancing Column. On Order in Architecture*, Cambridge, Ma.

Schachter, A. (1981): *Cults of Boiotia 1. Acheloos to Hera*. London.

Schede, Martin (1929): *Zweiter vorläufiger Bericht über die von den Berliner Staatlichen Museen unternommenen Ausgrabungen auf Samos*

Scheffer, Thassilo von (1984): *Hesiod sämtliche Werke*, with a preface by Ernst Günter Schmidt

Schleif, Hans, Konstantinos Rhomaios and Günther Klaffenbach (1939-1940): *Der Artemistempel. Architektur, Dachterrakotten, Inschriften* (Korkyra. Archaische Bauten und Bildwerke 1), ed. Gerhart Rodenwaldt, Berlin.

Schneider (2002): *Bautabellen für Architekten*. 19th ed. Köln.

Schneider, Lambert (1990): *Die Akropolis von Athen*.

Scholl, Andreas (2006): Acropolisvotive. *JdAI*.

Schuller, M. (1985): Die dorische Architektur der Kykladen in spätarchaisher Zeit, *JdI* 100: 319-398.

Schwandner, Ernst-Ludwig (1985): *Der ältere Porostempel der Aphaia auf Ägina* (Denkmäler antiker Architektur 16), Berlin.

Schwendemann, Karl (1921): Der Dreifuss. Ein formen- und religionsgeschichtlicher Versuch, *JdI* 36: 98-185.

Segal, Phoebe (2010): *Soaring Votives: Anathemata in Archaic Greek Sanctuaries*. Dissertation, New York.

Semper, Gottfried (1851): *Die Vier Elemente der Baukunst*, Braunschweig
— (1878): *Der Stil in den technischen und tektonischen Künsten* 2nd edition

Shapiro H.A. (1989): *Art and Cult under the Tyrants in Athens*

Shaya, Josephine (2005): The Greek Temple as Museum: The Case of the Legendary Treasure of Athina from Lindos. *AJA*

Shaw, Joseph W. (1989): Phoenicians in southern Crete. *AJA* 93: 165-183.
— (2001): The Mystery of the Pitsidian Slab, *Festschrift für Jörg Schäfer*, Ergon verlag.

Shoe Meritt, Lucy (1996): Athenian Ionic Capitals from the Athenian Agora, *Hesperia* 65: 121-174.

Sjogren, L. (2003): *Cretan Locations: Discerning Site Variations in Iron Age and Archaic Crete (800 – 500 B.C.)*. BAR International Series, Vol. 1185. Oxford.

Sourvinou-Inwood, Christiane (1979): The myth of the first temples at Delphi, *CQ* 73: 231-251.
— (1990): What is *polis* religion?, in Murray and Price 1990: 295-322.
— (1991): *'Reading' Greek Culture: Texts and Images, Rituals and Myths*, Oxford.
— (1993): Early Sanctuaries, the Eighth Century and Ritual Space, Fragments of a Discourse, *AA.VV. 1993*, (Marinatos-Hägg): 1-17.

Spawforth, Tony (2006): *The Complete Greek Temples*, London. Thames and Hudson.

Stibbe, C. M. (1972): *Lakonische Vasenmalerei des sechsten Jahrhunderts v. Chr.*

Strøm, Ingrid (1988): The Early Sanctuary of the Argive Heraion and its External Relations (8th - 6th Cent. B.C.). The Monumental Architecture, *ActaArch* 59: 173-203.

— (1992): Evidence from the Sanctuaries. *Greece between East and West: 10th-8th centuries BC*, con., New York, 1990, ed. Günther Kopcke, Isabelle Tokumaru, Mainz. 46-60.

— (1995): The Early Sanctuary of the Argive Heraion and its External Relations (8th.- Early 6th. Cent. BC.). The Greek Geometric Bronzes, *Proceedings of the Danish Insitute at Athens* 1: 37-127.

— (1998): The Early Sanctuary of the Argive Heraion and its External Relations (8th.- Early 6th. Cent. BC.). Bronze imports and Archaic Greek Bronzes, *Proceedings of the Danish Insitute at Athens* 2: 37-126.

Straten, F. T. van (1981): Gifts for the gods. *Faith, hope and worship. Aspects of religious mentality in the ancient world*, ed. H.S. Versnel, Leiden *1981*: 65-151.

— (1995): *Hierà Kalá. Images of Animal Sacrifice in Archaic and Classical Greece*, Leiden.

Stucchi, S. (1975): *Architectura Cirenica. Monografie di Archaeologia Libica*. Rome.

Svenson-Evers, Hendrik (1996): *Die griechischen Architekten archaischer und klassicher Zeit.* Archäologische Studien 11, Frankfurt.

— (1997): ΙΕΡΟΣ ΟΙΚΟΣ, Zum Ursprung des griechischen Tempels, *Kult und Kultbauten auf der Akropolis*, con., Berlin, 1995, ed. Wolfram Hoepfner, Berlin. 132-151.

Texier, Charles (1862): *Asie mineure: description géographique, historique et archéologique des provinces et des villes de la Chersonnèse d'Asie*.

Theodorescu, Dinu (1974): *Chapiteaux ioniques de la Sicile Meridionale* (Cahiers du Centre Jean Bérard 1). Naples.

— (1980): *Le chapiteau ionique grec. Essai monographique*.

Thiersch, Friedrich (1879): Die Tholos des Atreus zu Mykenae, *AM* 4: 177-182.

Townsend, R. F. (2004): Classical Signs and Anti-Classical Signification in the 4th century Athenian Architecture. *Hesperia Supplement 33*: 305-326.

Tuchelt, Klaus (1991): Branchidai-Didyma. Geschichte, Ausgrabung und Wiederentdeckung eines antiken Heiligtums, *Antike Welt. Sondernummer*: 1-54.

— (1996): *Didyma Teil 3: Erghebnisse der Ausgrabungen und Untersuchungen seit dem Jahre 1962*. Mainz.

— (2007): Überlegungen zum archaischen Didyma, *Frühes Ionien. Eine Bestandsaufnahme* (Milesische Forschungen 5), con., Güzelçamli, 1999, ed. Justus Cobet *et. al*., Mainz: 393-412.

Ulf, Christoph (2004): *Der neue Streit um Troia - eine Bilanz*. C.H. Beck, München

Valvanis, Panos D. (1987): Säulen, Hähne, Niken und Archonten auf Preisamphoren AA 1987. 467-480.

Vollkommer, Rainer (1991): Zur Deutung der Löwenfrau in der frühgriechischen Kunst; *Athenische Mitteilungen 106*. 47-64.

Vallois, René (1953): *Les Constructions Antiques de Délos: Documents* (BEFAR 157), Paris.

— (1966): *L'architecture hellénique et hellénistique à Délos jusqu'à l'éviction des Déliens (166 av. J.C.), 1. Les Monuments*. Paris.

Vance Watrous L. and Hadzi-Vallianou Desponia (2004): *The plain of Phaistos: cycles of social complexity in the Mesara region of Crete*. Los Angeles.

Wace, A. J. B. (1949): *Mycenae. An Archaeological History and Guide*, Princeton.

Walter, Hans (1960): Sphingen. *Antike und Abendland 9*. 63-72.

— (1965): *Das Griechische Heiligtum – Heraion von Samos*. Munich

— (1976): *Das Heraion von Samos. Ursprung und Wandel eines griechischen Heligtums*, Munich.

Walter-Karydi, E. (1987): *Alt-Aigina II, 2. Die Äginetische Bildhauerschule, Werke und schriftliche Quellen*. Mainz.

Wannagat, Detlev (1995): Säule und Kontext. Piedestale und Teilkannelierung in der griechischen Architektur. München.

Weber, Berthold (1996): Zum säptarchaischen Tempel auf dem Mengerevtepe bei Milet. *Säule und Gebälk,* Mainz. 84-89.

Weber, Marga (1990): *Baldachine und Statuenschreine,* Rome. L'Erma

Weickenmeier, Stefan (1985): *Theorienbildung zur Genese des Triglyphon*. Darmstadt.

Wesenberg, Burkhardt (1971): *Kapitelle und Basen: Beobachtungen zur Entstehung der griechischen Säulenform* (BJb Beihefte 32), Düsseldorf.

— (1994): Griechische Säulen- und Gebälkformen in der Literarischen Überlieferung; *Säule und Gebälk,* Mainz. 1-15.

West, Martin L. (1971): *Early Greek Philosophy and the Orient*, Oxford.

— (1997): *The East Face of Helicon. West Asiatic Elements in Greek Poetry and Myth*, Oxford.

— (2011): *The Making of The Iliad*, Oxford.

White, Donald (1971): The Cyrene Sphinx, its Capital and its Column, *AJA* 75: 47-55.

— (1981): Cyrene's Sanctuary of Demeter and Persephone: A Summary of a Decade of Excavation, *AJA 85*: 13-30.

Whitley, James (2001): *The Archaeology of Ancient Greece*, Cambridge and New York

Wiegand, Theodor (1904): *Die archaische Poros-Architektur der Akropolis zu Athen*, Cassel and Leipzig.

Wiegartz, H. (1994): Aeolische Kapitelle. Neufunde 1992 und ihr Verhältnis zu den bekannten Stücken, *Neue Forschungen zu Neandria und Alexandria Troas* (Asia Minor Studien 11), ed. E. Schwertheim and H. Wiegartz, Bonn: 117-132.

Williams, Dyfri (1982): Aegina, Aphaia-Tempel. *AA* 55-68.

Wilson Jones, Mark (2000): *Principles of Roman Architecture*, London and New Haven.

— (2001): Doric Measure and Architectural Design 2: A Modular Reading of the Classical Temple, *AJA* 105: 675-713.

— (2002): Tripods, Triglyphs, and the Origin of the Doric Frieze, *AJA* 106. 353-390.
— (forthcoming): *The Orders, Gifts to the Gods*.

Wright, George R. H. (2000): *Ancient building technology*, Leiden.

Wright, James C. (1982): The old temple terrace at the Argive Heraeum and the early cult of Hera in the Argolid, *JHS* 102: 186-201.

Wurz, Erwin and Wurz, Reinhold (1925): *Die Entstehung der Säulenbasen des Altertums unter Berücksichtigung verwandter Kapitelle*, Heidelberg. Carl Wingers Universitätsbuchhandlung.

Yalouris N. (1967): Συμβολή εις την αποκατάστασιν των γλυπτών του ναού των Βασσών. *Αρχαιολογική εφημερίς*, 106: 187-199.

Zwickel, Wolfgang (1999): *Der Salomonische Tempel*. Von Zabern, Mainz.

***